

**FILED**

NOV 0 6 1997

SECRETARY, BOARD OF  
OIL, GAS & MINING

BEFORE THE BOARD OF OIL, GAS AND MINING  
DEPARTMENT OF NATURAL RESOURCES  
STATE OF UTAH

---oo0oo---

IN THE MATTER OF THE PETITION	:	SUPPLEMENTAL MEMORANDUM
FILED BY THE DIVISION OF OIL,	:	
GAS AND MINING FOR AN ORDER	:	DOCKET NO. 97-009
REQUIRING IMMEDIATE	:	CAUSE NO. M/027/007
RECLAMATION OF THE DRUM MINE,	:	
FROM WESTERN STATES MINERALS	:	
CORPORATION AND JUMBO MINING	:	
COMPANY, MILLARD AND JUAB	:	
COUNTY, UTAH.	:	

---oo0oo---

Pursuant to an order issued by the Board of Oil, Gas and Mining, the Division of Oil, Gas and Mining ("Division") submits this SUPPLEMENTAL MEMORANDUM concerning the issue of bond adequacy for the Drum Mine.

On September 11, 1997, the Division acting under its authority pursuant to R647-4-102, determined that the Drum mine site was inadequately bonded (FINDING AND ANALYSIS, DRUM MINE). The Division found that Western States Minerals Corporation's ("Western States") bond should be adjusted from \$264,080 to \$1,337,000 and Jumbo Mining Company's ("Jumbo") bond should be adjusted from \$162,000 to \$1,337,000. On September 12, 1997, the Division filed a NOTICE OF AGENCY ACTION TO ENFORCE VIOLATED MINERAL RULES due to the inadequate bonding of the site. Utah Admin. Rule R647-5-101 allows for an appeal of such an action. On September 19, 1997, Western States, in its MEMORANDUM IN OPPOSITION TO THE DIVISION'S MOTION FOR CONTINUANCE, objected to having to defend itself in both a formal (failure to reclaim) and informal hearing (failure to post adequate surety). On September 26, 1997, after evaluating Jumbo's objection, the Division determined

that converting the informal hearing on adequacy of bond to a formal hearing was in the public's interest and would not prejudice the rights of any party. On October 3, 1997, the Board of Oil Gas and Mining ("Board") issued an "ORDER & NOTICE OF HEARING CONTINUING THE FORMAL HEARING ON THE RECLAMATION ISSUE AND CONSOLIDATING SAID HEARING WITH THE FORMAL HEARING ON THE BOND ISSUE". In addition to consolidating the two hearings, the order required the Division to "file a supplemental Memorandum". Thus, the Division now submits this supplemental memorandum.

### ARGUMENT

#### I. It is the Board's and the Division's Legal Responsibility to Ensure that Adequate Bond Exists For Reclamation at All Times

Under Utah law, the Board and the Division have the responsibility to ensure that a mine has, at all times, adequate bonding to conduct reclamation. Utah Code Ann. § 40-8-14(2) states:

(a) In determining the amount of surety to be provided, the board shall consider factual information and recommendations provided by the division as to the magnitude, type, and costs of approved reclamation activities planned for the land affected and the nature, extent, and duration of operations under the approved notice.

(b) The board shall approve a fixed amount estimated as required at any point in time covered by the notice of intent to complete reclamation to an acceptable standard.

Utah Code Ann. § 40-8-14(2) (1993 & Supp. 1997).

To accomplish this requirement, the Board has exercised its authority under § 40-8-6(1) to promulgate rules concerning the posting of surety. Utah Code Ann. § 40-8-6(1) (1993). Utah Admin. Rule R647-4-113(6) clearly envisions that changes to the surety will occur. R647-4-113(6) states, "[a]djustments or revisions made in the surety amount shall be in accordance with the terms and conditions outlined in the Reclamation Contract." Id. Pursuant to a Division policy, the Reclamation contract for the replacement surety posted by Jumbo in 1989, was based



on the cost of reclamation five years out to the year 1994. (EXHIBIT A). The estimate for reclamation on the Western States disturbed area was not recalculated in the 1989 transfer because the Division anticipated adjusting the surety for that area when responsibility for Western States disturbed area had been resolved. (EXHIBIT A) (Conditions of Transfer (i)&(j)). As stated in (i) "resolution of the reclamation responsibility question may ultimately require an additional adjustment to the Transferee's reclamation surety amount." (EXHIBIT A). Thus, given the provisions and the tables of the transfer agreement, all the parties were on notice that bonding for the site would be adjusted on or before 1994. Consequently, both Western States and Jumbo have been the beneficiary of at least three years of inaction by the Division. However, Western States and Jumbo have no legal or equitable right to continue in an under bonded status.

The Division's failure to adjust Western States surety in 1989 is partially explained by assertions made by Western States which claimed that settlement of its disputes with Jumbo was close and Western States would imminently start some reclamation in its area. If either assertion had proven to be true, it would have made a recalculation of Western States bond premature. In a 1989 letter by Western States to the Division, Western States said, "Western States Minerals has continued to work toward a equitable agreement with Jumbo Mining Company and appears (sic) to be within a **few weeks** of finally settling our differences." (EXHIBIT B) (emphasis added). In the letter Western States further stated that "As soon as we can get the differences resolved we plan on initiating the reclamation plan that we discussed on September 12, 1989." (EXHIBIT B).

In sum, the transfer agreement makes clear that the parties were well aware that readjustment of the surety should have occurred no later than 1994. Western States and Jumbo

have benefitted from a three year delay in the bond adjustment, but have no right to insist on continued under bonding. Additionally, the Board should not delay the increase in Western States surety due to its assertion that resolution of reclamation responsibility has or will occur shortly because that excuse is now eight years old.

Utah Admin. Rule R647-4-102 provides an additional basis for the Division to require additional bond from Western States and Jumbo. R647-4-102 states, "[t]he approved notice of intention, including any subsequently approved amendments or revisions, shall remain in effect for the life of the mine. However, the Division may review the permit and require updated information and *modifications* when warranted." Utah Admin Code R647-4-102 (1997) (emphasis added). The findings by the Division clearly demonstrate that an adjustment of the bond is warranted.

Another basis for the Division's action, Utah Rule R647-4-117(2), states:

1. The operator need not notify the Division of the temporary suspension of mining operations.
2. In the case of a termination or a suspension of mining operations **that has exceeded**, or is expected to exceed two (2) years, the operator shall, upon request, furnish the Division with such data as it may require to evaluate the status of the mining operation, the status of compliance with these rules, and the probable future status of the land affected. Upon review of such data, the Division **will take such action as may be appropriate**. The Division may grant an extended suspension period if warranted by a showing of good cause by the operator.
3. The operator shall give the Division prompt written notice of a termination or suspension of large mining operations expected to exceed five (5) years. Upon receipt of notification, the Division shall, within 30 days, make an inspection of the property.
4. Large mining operations that have been approved for an extended suspension period will be reevaluated on a regular basis. Additional interim reclamation or stabilization measures may be required in order for a large mining operation to remain in a continued state of suspension. Reclamation of a large mining operation may be required after five (5) years of continued suspension. The Division will require complete reclamation of the mine site when the suspension period exceeds 10 years, unless the operator appeals to the Board prior to the expiration of the 10-year period and shows good cause for a longer suspension period.

Utah Admin Code R647-4-117 (1997) (emphasis added).



The Division has determined that mining at the site has ceased for seven years. Western States does not dispute that it has ceased mining. While Jumbo disputes the contention that it is in suspension, its own annual reports rebut its argument. (EXHIBIT C). Since mining is in suspension, the appropriate action by the Division necessary to comply with R647-4-117 includes the revision of the bond to assure reclamation will occur. Even if reclamation of the site is not ordered by the Board bonding for the site needs to be increased. Utah Code § 40-8-14(2) requires that adequate surety exist "at any point of time covered by the notice of intent". Utah Code Ann. § 40-8-14(2) (1993 & Supp. 1997). It would be proper for the Division to increase a bond even after reclamation has begun, if the Division found that the bond was not sufficient to assure completion of the reclamation.

In conclusion, Utah law not only supports the Division's requirement that Jumbo and Western States provide additional surety, it mandates the Division action.

II. Contrary To Jumbo's Assertion, the Drum Mine Site is Clearly Inadequately Bonded to Assure Reclamation

Notably, Western States in its certain "APPEAL OF AGENCY ACTION and MOTION TO STAY", dated September 24, 1997, does not contest any of the reclamation costs estimates. (EXHIBIT D). Thus, the Division only needs to address Jumbo's objections to the validity of the basis of the Division's need for a new surety estimate. (EXHIBIT E). The Division has determined that Jumbo's present surety is inadequate to assure reclamation of its disturbed area. The FINDINGS AND ANALYSIS DRUM MINE ("Findings") demonstrate several factors that have led to the inadequacy of the bond. (EXHIBIT F at 2).

The new cost factor at this site is the cost of detoxification of the heaps. The Division could not have included the costs of detoxification in the 1989 estimate, since the Division of Water Quality ("DWQ") allowed the operation of the heaps until October 1990.

Before October 1990, Western States and Jumbo represented that the heaps could be detoxified by rinsing. This is no longer possible for Western States or Jumbo since the procedure for rinsing the heaps can no longer be employed. The Department of Health, Division of Environmental Health states in a December 14, 1988 letter that "The Bureau of Water Pollution Control (the Bureau) will not consider requests to extend the operating life of these facilities [the heaps] beyond 1 October 1990." (EXHIBIT G). In a letter dated January 17, 1997 to Western States, the Bureau of Land Management states explicitly, "[s]ince the integrity of the pad liners and collection systems is not acceptable, the heaps cannot be rinsed." (EXHIBITS H at 2). Since rinsing is not possible the BLM and DWQ have required a capping scenario absent a finding by those agencies that the heaps are detoxified. In a letter dated January 15, 1997, to Jumbo the BLM states, "[c]apping of the heaps must begin within 120 days of receipt of this letter, unless DWQ has by then determined that the heaps are decontaminated." (EXHIBIT I at 3.) On September 10, 1997, DWQ stated, "[a] cap over the leach pads to minimize infiltration will be required unless you can demonstrate that a less protective design is justified." (EXHIBIT J). Despite this, Jumbo now objects to the cost of capping being included in the revised surety. On September 20, 1997, Jumbo asserted that "[t]here is no requirement in any permit to cap or relocate the heaps, and there is nothing in the record which would indicate that this is required to meet permit requirements." (EXHIBIT E). Jumbo is ignoring an important part of the Utah Mined Land Reclamation Act. § 40-8-17(1) states, "[t]he approval of a notice of intention shall not relieve the operator from responsibility to comply with all other applicable statutes, rules, regulations, and ordinances, including but not limited to, those applying to safety, air and water pollution, and public liability and property damage." Utah Code Ann. § 40-8-17(1) (1993). Thus, the Division must consider other agencies requirements when it calculates a bond



amount. This requirement was applicable when DWQ ordered Jumbo to shutdown its heaps by October 1990. At that time, it should have filed a new reclamation plan pursuant to Utah Code Ann. § 40-8-18 which states:

(1) In recognition that mining operations and related reclamation plans may require revision to fit changing conditions or developing technology, an operator who is conducting mining operations under an approved notice of intention **shall submit to the division a notice of intention when revising mining operations**. This notice of intention to revise mining operations shall be submitted in the form provided for in the rules promulgated by the board.

(2) The notice of intention to revise mining operations will be designated as an amendment to the existing notice of intention by the division, based on rules promulgated by the board. An amendment of a notice of intention will be reviewed and considered for approval or disapproval by the division within 30 days of receipt of a notice of intention to revise mining operations.

(3) A notice of intention to revise mining operations, if not designated as an amendment of a notice of intention, as set forth in Subsection 40-8-18(2), **shall be processed and considered for approval by the division in the same manner** and within the same time period as an original notice of intention. The operator shall be authorized and bound by the requirements of his existing notice until the revision is acted upon and any revised surety requirements are established and satisfied.

(4) Small mining operations shall submit an amendment to the notice of intention when changes in the operations occur. Approval of an amendment of small mining operations is not required.

Utah Code Ann. § 40-8-18 (1993) (emphasis added).

The revision of the plan which the shutting of the heaps required would not have been considered an amendment under § 40-8-18(2) because it could not have been considered an insignificant change.<sup>1</sup> Thus, the revisions would have been processed under R647-4-118

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<sup>1</sup> Utah Rule R647-4-119 states:

1. An amendment is an insignificant change to the approved notice of intention. The Division will review the change and make the determination of significance on a case-by-case basis.

2. A request for an amendment should be filed on the Notice of Intention to Revise Large Mining Operations (FORM MR-REV). An amendment of a large mining operation requires Division approval but does not require public notice. Utah Admin. Code R647-4-119 (1997).

A revision of the mining plan of the magnitude created by the DWQ order to cease leaching of the heaps to prevent the contamination of water cannot be considered "insignificant".

which states:

1. In order to revise a notice of intention, an operator shall file a Notice of Intention to Revise Large Mining Operations (FORM MR-REV). This notice of intention will include all information concerning the revision that would have been required in the original notice of intention.
2. A Notice of Intention to Revise Large Mining Operations (FORM MR-REV) will be processed and considered for approval by the Division in the same manner as an original notice of intention. The operator will be authorized and bound by the requirements of the existing approved notice until the revision is acted upon and any **revised surety requirements are satisfied**. Those portions of the approved notice of intention not subject to the revision will not be subject to review under this provision.
3. Large mining operations which have a disturbed area of five (5) acres or less may refile as a small mining operation. Reclaimed areas must meet full bond release requirements before they can be excluded from the disturbed acreage.

Utah Admin. Code R647-4-118 (1997) (emphasis added).

Thus, the rules recognize the need to revise the bond amount when a need to revise the reclamation plan occurs. Jumbo's failure to comply with the Utah Mined Land Reclamation Act and file a revision to its plan, when DWQ's action mandated a change, is not a defense to inadequate bonding.

The second major factor in the escalation of the bond is the Division's determination that the area of disturbance is much greater than the Division was led to believe by the operators. (EXHIBIT A). The digitizing of the aerial photos led to an estimate of the disturbed area which was approximately twice the original bonded estimate. (EXHIBIT F at 8). Jumbo does not have a right to a lower bond because it supplied inaccurate data to the Division when the Division calculated the original bond amount.

The final significant factor in the surety revision was the escalation of the costs due to the impact of inflation on reclamation costs estimates. (EXHIBIT F at 20.) The procedure is normal Division policy. The original reclamation estimate was only escalated to 1994, thus when the bond was recalculated it truly reflected the impact of eight years of inflation and not the standard



five-year escalation. While Jumbo clearly benefitted by being allowed to have a bond for three years that did not reflect inflation, it has no legal right to such a bond.

Jumbo also raises a number of minor issues; the Division will address only a few of them. Jumbo objects to the fact that Randy Harden, the Division's professional engineer, did not visit the site prior to making the calculations. However, Jumbo fails to state how an estimate which is based on aerial photography, the Division's extensive collection of photos and slides of the sites and a digitized map with accurate acreage estimates would be inferior to an estimate based on an on-site inspection. Moreover, after visiting the site, Mr. Harden did not find anything which would support a lower bond estimate.

Another objection raised by Jumbo is that the Division did not use the Caterpillar Performance Handbook to calculate the bond amount. The Division used another accepted authority to calculate the amounts, the R.S. Means, 1997 Heavy Construction Cost Data, 11th Annual Edition. The Division considers either source to be reliable, but its standard authority is R.S. Means. The use of an accepted authority cannot be considered arbitrary. Jumbo is free to use the Caterpillar Performance Handbook in any revised reclamation plan it submits. The Division determined that given the lack of specificity in the present reclamation plan, R.S. Means was the better resource. Once Jumbo submits a revised reclamation plan that reflects the present on-ground conditions, revisions of the bond estimate is possible. As was stated in the FINDINGS, "[a]ny further adjustments to the bond estimates shown above will require that specific and concise reclamation plans be submitted to the Division for review and approval." (EXHIBIT F at 2).

It is Jumbo's responsibility under R647-4-105 to provide information to the Division to

facilitate accurate bond estimates. This is best illustrated by the text in R647-4-105.3.17 which states, "[a] reclamation activities and treatment map to identify the location and the extent of the reclamation work to be accomplished by the operator upon cessation of mining operations. This drawing shall be utilized to determine adequate bonding and reclamation practices for the site[.]" Utah Admin. Code R647-4-105.3.17 (1997). Jumbo, once again, is trying to benefit from non-compliance with the Board's rules. Apparently, it would argue that if it does not supply data that accurately depicts the present conditions of the site it can avoid revisions of the bond.

In sum, the Division used reliable and accepted methods to calculate the surety. The sharp escalation of the bond was mandated by the changed conditions of the site, the correction of inaccurate information submitted by Jumbo to the Division, and eight years of inflation.

DATED this 5th day of November, 1997.

By Daniel G. Moquin  
Daniel G. Moquin  
Assistant Attorney General  
1594 West North Temple, Suite 300  
P.O. Box 140855  
Salt Lake City, UT 84114-0855  
(801) 538-7227



CERTIFICATE OF SERVICE

I hereby certify that I caused a true and correct copy of the foregoing SUPPLEMENTAL MEMORANDUM for Docket No. 97-009, Cause No. M/027/007 to be mailed, postage prepaid, this 1 day of November 1997, to the following:

H. Michael Keller, Esq.  
VAN COTT, BAGLEY, CORNWALL  
& McCARTHY  
Attorney for Western States Minerals Corp.  
50 South Main Street, Suite 1600  
Salt Lake City, UT 84144

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Christopher Hayes, Esq.  
ALFERS & CARVER  
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Denver, CO 80202

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Morristown, NJ 07963

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HOLLAND & HART LLP  
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Salt Lake City, UT 84111

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Assistant Attorney General  
Attorney for the  
Division of Oil, Gas & Mining  
160 East 300 South, Sixth Floor  
P.O. Box 140857  
Salt Lake City, UT 84114-0857

**HAND DELIVERED TO:**

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Assistant Attorney General  
Attorney for the  
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1594 West North Temple, Suite 300  
P.O. Box 140855  
Salt Lake City, UT 84114-0855

Daniel G. Moquin, Esq.  
Assistant Attorney General  
Attorney for the  
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Salt Lake City, UT 84114-0855



A

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

RECEIVED  
JUL 11 1989

TRANSFER OF NOTICE OF INTENTION  
LARGE MINING OPERATIONS

DIVISION OF  
OIL, GAS & MINING

---00000---

1. (a) Notice of intention to be transferred (file number): M/027/007  
(b) Name of mining operation: Drum Mine  
(c) Location of mining operation (county): Millard, Utah  
(d) Name, telephone number and mailing address of the operator currently holding the notice of intention (transferor):  
Western States Minerals Corporation  
4975 Van Gordon Street  
Wheatridge, Colorado 80033
2. (a) Name, telephone number and mailing address of the operator acquiring the notice of intention (transferee):  
Jumbo Mining Company  
6305 Fern Spring Cove  
Austin, Texas 78730 512- 346-4537  
(b) Name, telephone number and address of the authorized representatives of the Transferee to whom any notices under the provisions of the Utah Mined Land Reclamation Act may be sent:  
Same as above Mr. E.B. King
3. (a) The total disturbed area identified in the approved notice of intention: 143.7 acres original; 126 revised acres  
(b) The actual number of acres disturbed by the operation through date of transfer: 126 acres  
(c) Attach a legal description of above acreages as Appendix "A" and a map of suitable scale with actual disturbed areas clearly shown and identified.
4. This application must be accompanied by a fully executed and signed Reclamation Contract (Form MR-RC).



SWORN STATEMENT OF TRANSFEROR

I, ALLAN R. CERNY being first duly sworn under oath, deposes and says that I am SECRETARY (officer or agent) of WESTERN STATES MINERALS CORPORATION; (corporation/company name) and that I am duly authorized to execute and deliver the foregoing obligations; that I have read the said application and fully know the contents thereof; that all statements contained in the transfer application are true and correct to the best of my knowledge and belief based upon the attached map and calculations forwarded to me by E. B. King of Jumbo Mining Company. By execution of this statement I certify that the Transferor is in full compliance with the Utah Mined Land Reclamation Act, the Rules and Regulations Promulgated thereunder, and the terms and conditions of Notice of Intention No. M/027/007.

Western States Minerals Corporation hereby makes no representation in regard to the allocation of responsibility for reclamation as between Western States Minerals Corporation and Jumbo Mining Company.

Allan R. Cerny  
Signature  
ALLAN R. CERNY  
Name (Typed or Print)  
SECRETARY - WSMC  
Title

Subscribed and sworn before me this 6 day of July, 1989.

Jean Ruppel  
Notary Public

My commission expires:  
August 2, 1991.

State of Colorado )  
County of Jefferson ) ss.

FINAL SWORN STATEMENT OF TRANSFEREE

E.B. King being first duly sworn under oath,  
depose and say that I am President  
(officer or agent)  
of Jumbo Mining Company; and that I am duly authorized to  
(Corporation/Company Name)

execute and deliver the foregoing obligations; that I have read the  
application and fully understand the contents thereof; that all statements  
contained in the transfer application are true and correct to the best of my  
knowledge and belief. By execution of this statement, the Transferee agrees  
to be bound by the terms and conditions of Notice of Intention  
No. M/027/007, the Utah Mined Land Reclamation Act, and the Rules and  
Regulations promulgated thereunder. *\*Except for those issues  
of which the Division, the Dept. of Health and Transfer are on notice.*

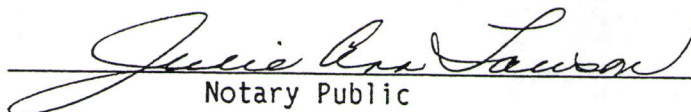


Signature

Name (Typed or Print) E.B. King

Title President

Subscribed and sworn before me this 10th day of July, 19 89.

  
Notary Public

My commission Expires:

February 10, 19 90.

State of Utah )  
County of Salt Lake ) ss.



CERTIFICATION OF APPROVAL

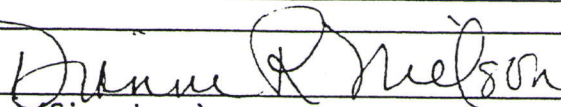
This is to certify that I have examined the foregoing application and do hereby grant the same, subject to the following limitations and conditions:

- (a) This transfer of notice of intention grants only the right to affect the lands described in Appendix "A".
- (b) The transferee has provided to the Division a fully executed and signed Reclamation Contract (Form MR-RC). The surety shall be effective on the date of transfer.
- (c) The transferee, or such other person as required by UCA 1953, Title 40-8, has acquired legal right to mine for lands described in Appendix "A".

COMMENTS:

Additional Conditions of Transfer - See Attachment 1

APPROVED:

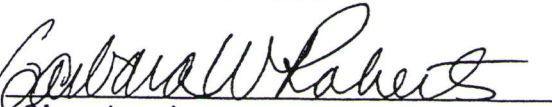
  
(Signature)

Director, Division of Oil, Gas and Mining

Effective Date:  
NOI No.:

8/4/89  
M/027/007

APPROVED AS TO FORM:

  
(Signature)

Assistant Attorney General

MN9/45-48

## **ATTACHMENT 1**

### **Transfer of Notice of Intention No. M/027/007 Certification of Approval Conditions of Transfer**

**July 25, 1989**

#### **Conditions of Transfer (continued)**

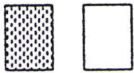
- (d) The Division will continue to hold the Transferor responsible for the reclamation of approximately 42 acres of existing Drum Mine surface disturbance, as delineated in Appendix A.
- (e) The Division will hold the Transferee responsible for the reclamation of approximately 84 acres of existing Drum Mine surface disturbance, as delineated in Appendix A.
- (f) The Transferor will retain responsibility for resolving the topsoil deficiency issue.
- (g) The Transferee's 84 acre Drum Mine reclamation responsibility includes posting a reclamation surety of \$143,000, based on reclamation calculations from Appendix A information.
- (h) An additional 11 acres of surface disturbance will be approved as an amendment to the Drum Mine permit. The Transferee will provide an additional \$19,000 reclamation surety amount for the proposed amendment (Drum Mountain Project).
- (i) The Division will retain possession of the Transferor's \$264,080 reclamation surety bond, until the topsoil deficiency issue and the question of ultimate Drum Mine reclamation responsibility between the Transferor and Transferee is resolved.
- (j) Resolution of the reclamation responsibility question may ultimately require an additional adjustment to the Transferee's reclamation surety amount.

jb  
MN3/52



# APPENDIX "A"

Western States will reclaim these areas (41.8 acres).  
 Jumbo Mining will reclaim remaining areas (83.9 acres).



• Drillholes

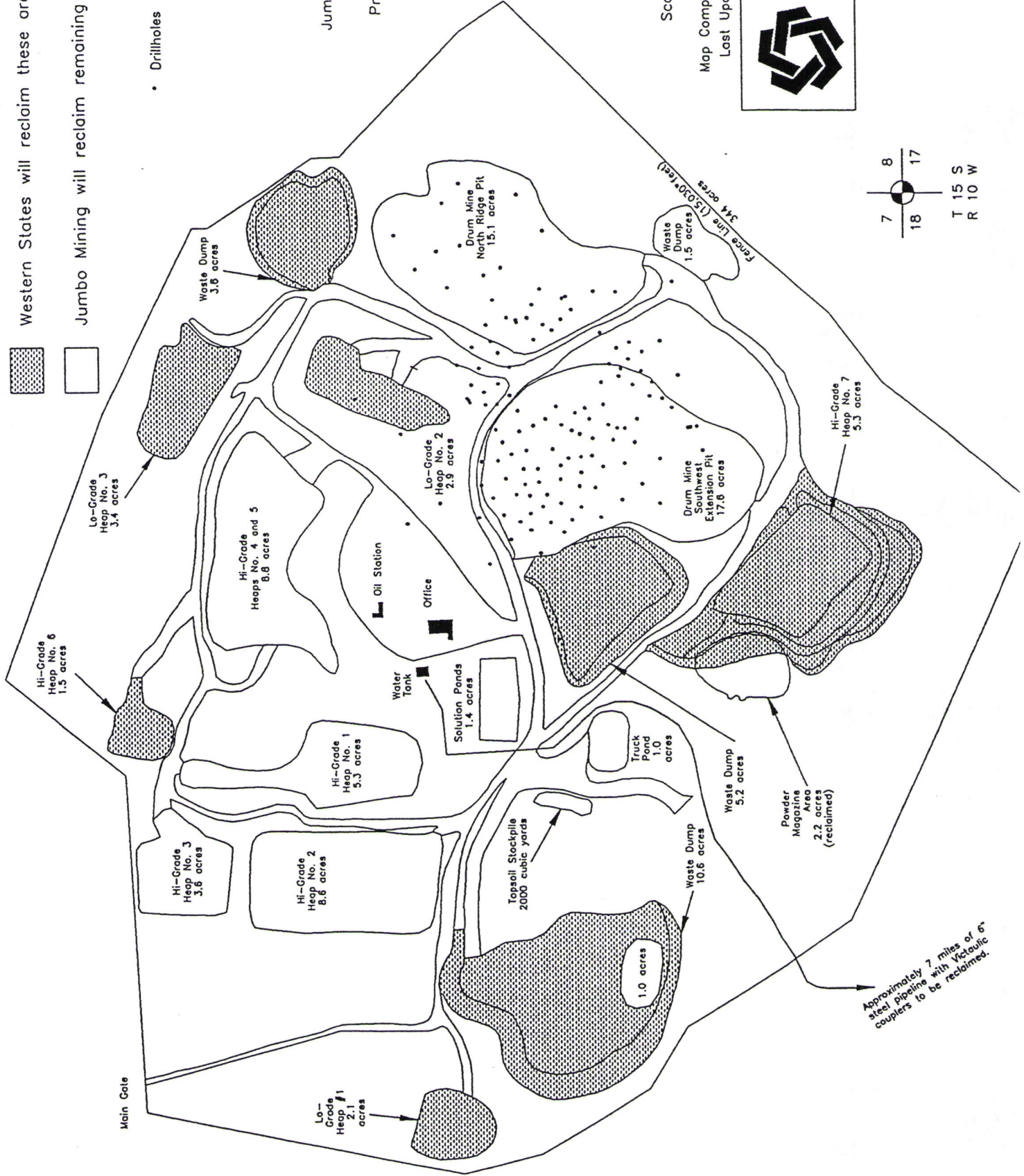
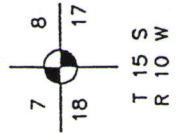
Jumbo Mining Company  
 M/027/007  
 Drum Mine Site  
 Present Disturbance

Scale: 1" = 600'

Map Compiled December 5, 1988  
 Last Update: July 26, 1989



State of Utah  
 Department of Natural Resources  
 Division of Oil, Gas and Mining



Approximately 7 miles of 6" steel pipeline with vitacolic couplers to be reclaimed.





# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

July 26, 1989

TO: Board of Oil, Gas and Mining

THRU: Lowell P. Braxton, Associate Director, Mining *LAB*

FROM: D. Wayne Hedberg, Senior Reclamation Specialist/Hydrologist *DWH*

RE: Request for Board Concurrence, Amount and Form of Reclamation Surety,  
Drum Mine, Jumbo Mining Company, M/027/007, Millard County, Utah

The Division seeks the Board's concurrence on the amount and form of reclamation surety to be provided by Jumbo Mining Company (Jumbo) for continued operations at the Drum Mine located in Millard and Juab Counties, Utah. Attached for your reference, is a copy of the executive summary for the original Drum Mine permit application.

On November 17, 1983, the Board approved the amount and form of reclamation surety filed by Western States Minerals Corporation (WSMC). Jumbo has recently purchased the Drum Mine property from WSMC. A revised reclamation surety estimate of \$143,000 (in 1994 dollars) has been calculated by the Division to reclaim portions of this minesite. The revised reclamation surety includes the projected reclamation costs (\$19,000) for an additional 11-acre disturbance associated with a recent permit amendment filed by Jumbo (Drum Mountain Project). A total reclamation surety of \$162,000 will be posted by Jumbo for continued operations at the Drum Mine and to initiate mining on the new Drum Mountain Project.

The proposed form of surety will be United States Treasury Bills which will be held in the name of the State of Utah, Division of Oil, Gas and Mining, and the U.S. Department of the Interior, Bureau of Land Management. Securities transactions will be handled by and processed through the Utah State Treasurer's office.

Also attached are copies of the updated reclamation surety estimate, the Reclamation Contract (Form MR-RC), and the amount and form of reclamation surety. A copy of Jumbo's reclamation surety "Pledge Plan" is attached for your review. A copy of the revised permit transfer form (Form MR-TRL), with conditions, has been provided for your information. The Division is presently working to complete the permit transfer between WSMC and Jumbo.

Thank you for your time and consideration of this formal request for acceptance of the amount and form of reclamation surety.

jb  
Attachments  
MN2/36



# Reclamation Estimate for JUMBO MINING COMPANY M/027/007

Prepared By  
Utah State Division of Oil, Gas and Mining  
April 4, 1989 Revised 7-26-89

Description	Quantity	Total Unit	\$/Unit	Cost (\$)
<b>Drum Mine Pit and Decline Reclamation</b>				
Remove Trash		Lump Sum		2,000
Construct Berms Along Highwalls	1,200	Linear Feet	4.70	5,640
Construct Seal 100' Inside Portal	5	Portals	1,000	5,000
Backfill Portal	2,000	Cubic Yards	0.60	1,200
Rip Roadways in Pits	12.0	Acres	150	1,800
Revegetate *	12.0	Acres	175	2,100
Subtotal				17,740
<b>Heap Leach Pad Reclamation</b>				
Decommission Heap Leach Pads	29.4	Acres	490	14,300
Remove Trash	29.4	Acres	100	2,940
Grade to a 3h:1v Slope	29.4	Acres	800	23,520
Haul and Spread Topsoil	2,000	Cubic Yards	0.63	1,260
Revegetate *	29.4	Acres	175	5,150
Subtotal				47,170
<b>Drum Mine Waste Dumps Reclamation</b>				
Remove Trash	2.5	Acres	100	250
Grade to a 3h:1v Slope	2.5	Acres	800	2,000
Revegetate *	2.5	Acres	175	440
Subtotal				2,690
<b>Facilities Reclamation</b>				
Demolish and Dispose of Buildings	5,000	Square Feet	2.90	14,500
Remove Fenceline	15,030	Linear Feet	1.25	18,790
Remove 6" Pipeline	38,000	Linear Feet	0	0
Plug Drill Holes	30	Each	100	3,000
Remove Trash	40.0	Acres	100	4,000
Rip Roads	23.3	Acres	150	3,500
Revegetate *	40.0	Acres	175	7,000
Subtotal				50,790
Totals				118,390
Add Contingency (10%)				11,840
TOTAL RECLAMATION COST (1989 Dollars)	83.9	Acres	1,550	130,230
TOTAL RECLAMATION COST (1994 Dollars) @ 1.93% Annual Inflation	83.9	Acres	1,700	143,000

# Reclamation Estimate for JUMBO MINING COMPANY M/027/007

Prepared By  
Utah State Division of Oil, Gas and Mining  
April 4, 1989      Revised 7-26-89  
(Continued)

## Cost Parameters Used

621B Scraper (O&O)	150	\$/hour
Production	240	Cubic Yards/hour
D-8 Dozer (O&O)	160	\$/hour
Production	300	LCY/hour
Speed w/ripper	1	mph
Labor Only	24	\$/hour
Trash Removal	100	\$/acre
Farm Tractor (O&O)	67	\$/hour
Speed	4	mph
Width of Pass	6	feet

Revegetation Cost per Acre	Quantity	Unit	\$/Unit	Total Cost (\$)
Bare Costs				
Seed Mix	19	Pounds	7.37	140
Application Costs				
Seed Mix (broadcast by hand)	0.5	Hours	24	12
Scarify (tractor with chain)	0.3	Hours	67	23
Subtotal				35
Total Revegetation Cost per Acre				175



# Reclamation Estimate for JUMBO MINING COMPANY M/027/007

Prepared By  
Utah State Division of Oil, Gas and Mining  
May 22, 1989

Description	Unit	\$ /Unit	Jumbo Mining Company		Western States Minerals Corporation		Grand Totals	
			Quantity	Cost (\$)	Quantity	Cost (\$)	Quantity	Cost (\$)
<b>Drum Mine Pit and Decline Reclamation</b>								
Remove Trash	Lump Sum			2,000	0	0		2,000
Construct Berms Along Highwalls	Linear Feet	4.70	1,200	5,640	0	0	1,200	5,640
Construct Seal 100' Inside Portal	Portals	1,000	5	5,000	0	0	5	5,000
Backfill Portal	Cubic Yards	0.60	2,000	1,200	0	0	2,000	1,200
Rip Roadways in Pits	Acres	150	12.0	1,800	0	0	12	1,800
Revegetate *	Acres	175	12.0	2,100	0	0	12	2,100
Subtotal				17,740		0		17,740
<b>Heap Leach Pad Reclamation</b>								
Decommission Heap Leach Pads	Acres	490	29.4	14,300	16.3	7,990	45.7	22,290
Remove Trash	Acres	100	29.4	2,940	16.3	1,630	45.7	4,570
Grade to a 3h:1v Slope	Acres	800	29.4	23,520	16.3	13,040	45.7	36,560
Haul and Spread Topsoil	Cubic Yards	0.63	2,000	1,260	(a)	(a)	(a)	1,260
Revegetate *	Acres	175	29.4	5,150	16.3	2,850	45.7	8,000
Subtotal				47,170		25,510		72,680
<b>Drum Mine Waste Dumps Reclamation</b>								
Remove Trash	Acres	100	2.5	250	25.5	2,550	28.0	2,800
Grade to a 3h:1v Slope	Acres	800	2.5	2,000	25.5	20,400	28.0	22,400
Revegetate *	Acres	175	2.5	440	25.5	4,460	28.0	4,900
Subtotal				2,690		27,410		30,100

Reclamation Estimate for JUMBO MINING COMPANY M/027/007

Prepared By  
Utah State Division of Oil, Gas and Mining  
May 22, 1989

[illegible]

Totals  
Add Contingency (10%)

DEPRECIATION COST (1989 Dollars)

	TOTAL RECLAMATION COST (1983 Dollars)	TOTAL RECLAMATION COST (1994 Dollars) @ 1.93% Annual Inflation
1. Initial Construction	1,000,000	1,000,000
2. Annual Operation and Maintenance	100,000	100,000
3. Annual Capital Expenditures	100,000	100,000
4. Annual Replacement of Equipment	100,000	100,000
5. Annual Replacement of Structures	100,000	100,000
6. Annual Replacement of Vehicles	100,000	100,000
7. Annual Replacement of Tools and Equipment	100,000	100,000
8. Annual Replacement of Materials	100,000	100,000
9. Annual Replacement of Labor	100,000	100,000
10. Annual Replacement of Other Resources	100,000	100,000
11. Annual Replacement of Land	100,000	100,000
12. Annual Replacement of Water	100,000	100,000
13. Annual Replacement of Air	100,000	100,000
14. Annual Replacement of Soil	100,000	100,000
15. Annual Replacement of Vegetation	100,000	100,000
16. Annual Replacement of Wildlife	100,000	100,000
17. Annual Replacement of Cultural Resources	100,000	100,000
18. Annual Replacement of Historical Resources	100,000	100,000
19. Annual Replacement of Archaeological Resources	100,000	100,000
20. Annual Replacement of Paleontological Resources	100,000	100,000
21. Annual Replacement of Biological Resources	100,000	100,000
22. Annual Replacement of Geographical Resources	100,000	100,000
23. Annual Replacement of Geological Resources	100,000	100,000
24. Annual Replacement of Geophysical Resources	100,000	100,000
25. Annual Replacement of Geomorphological Resources	100,000	100,000
26. Annual Replacement of Hydrological Resources	100,000	100,000
27. Annual Replacement of Meteorological Resources	100,000	100,000
28. Annual Replacement of Oceanographic Resources	100,000	100,000
29. Annual Replacement of Other Resources	100,000	100,000
30. Annual Replacement of Other Resources	100,000	100,000
31. Annual Replacement of Other Resources	100,000	100,000
32. Annual Replacement of Other Resources	100,000	100,000
33. Annual Replacement of Other Resources	100,000	100,000
34. Annual Replacement of Other Resources	100,000	100,000
35. Annual Replacement of Other Resources	100,000	100,000
36. Annual Replacement of Other Resources	100,000	100,000
37. Annual Replacement of Other Resources	100,000	100,000
38. Annual Replacement of Other Resources	100,000	100,000
39. Annual Replacement of Other Resources	100,000	100,000
40. Annual Replacement of Other Resources	100,000	100,000
41. Annual Replacement of Other Resources	100,000	100,000
42. Annual Replacement of Other Resources	100,000	100,000
43. Annual Replacement of Other Resources	100,000	100,000
44. Annual Replacement of Other Resources	100,000	100,000
45. Annual Replacement of Other Resources	100,000	100,000
46. Annual Replacement of Other Resources	100,000	100,000
47. Annual Replacement of Other Resources	100,000	100,000
48. Annual Replacement of Other Resources	100,000	100,000
49. Annual Replacement of Other Resources	100,000	100,000
50. Annual Replacement of Other Resources	100,000	100,000
51. Annual Replacement of Other Resources	100,000	100,000
52. Annual Replacement of Other Resources	100,000	100,000
53. Annual Replacement of Other Resources	100,000	100,000
54. Annual Replacement of Other Resources	100,000	100,000
55. Annual Replacement of Other Resources	100,000	100,000
56. Annual Replacement of Other Resources	100,000	100,000
57. Annual Replacement of Other Resources	100,000	100,000
58. Annual Replacement of Other Resources	100,000	100,000
59. Annual Replacement of Other Resources	100,000	100,000
60. Annual Replacement of Other Resources	100,000	100,000
61. Annual Replacement of Other Resources	100,000	100,000
62. Annual Replacement of Other Resources	100,000	100,000
63. Annual Replacement of Other Resources	100,000	100,000
64. Annual Replacement of Other Resources	100,000	100,000
65. Annual Replacement of Other Resources	100,000	100,000
66. Annual Replacement of Other Resources	100,000	100,000
67. Annual Replacement of Other Resources	100,000	100,000
68. Annual Replacement of Other Resources	100,000	100,000
69. Annual Replacement of Other Resources	100,000	100,000
70. Annual Replacement of Other Resources	100,000	100,000
71. Annual Replacement of Other Resources	100,000	100,000
72. Annual Replacement of Other Resources	100,000	100,000
73. Annual Replacement of Other Resources	100,000	100,000
74. Annual Replacement of Other Resources	100,000	100,000
75. Annual Replacement of Other Resources	100,000	100,000
76. Annual Replacement of Other Resources	100,000	100,000
77. Annual Replacement of Other Resources	100,000	100,000
78. Annual Replacement of Other Resources	100,000	100,000
79. Annual Replacement of Other Resources	100,000	100,000
80. Annual Replacement of Other Resources	100,000	100,000
81. Annual Replacement of Other Resources	100,000	100,000
82. Annual Replacement of Other Resources	100,000	100,000
83. Annual Replacement of Other Resources	100,000	100,000
84. Annual Replacement of Other Resources	100,000	100,000
85. Annual Replacement of Other Resources	100,000	100,000
86. Annual Replacement of Other Resources	100,000	1

TOTAL RECLAMATION COST (1994 Dollars) @ 1.55% Annual Inflation = \$1,000,000.00

**Notes:**

(a) The solution for the topsoil activity. A bid was provided.

(b) The salvage value exceeds removal cost.



# Reclamation Estimate for JUMBO MINING COMPANY M/027/007

Prepared By  
Utah State Division of Oil, Gas and Mining  
May 22, 1989  
(Continued)

## Cost Parameters Used

621B Scraper (O&O)	150	\$/hour
Production	240	Cubic Yards/hour
D-8 Dozer (O&O)	160	\$/hour
Production	300	LCY/hour
Speed w/ripper	1	mph
Labor Only	24	\$/hour
Trash Removal	100	\$/acre
Farm Tractor (O&O)	67	\$/hour
Speed	4	mph
Width of Pass	6	feet

Revegetation Cost per Acre	Quantity	Unit	\$/Unit	Total Cost (\$)
Bare Costs				
Seed Mix	19	Pounds	7.37	140
Application Costs				
Seed Mix (broadcast by hand)	0.5	Hours	24	12
Scarify (tractor with chain)	0.3	Hours	67	23
Subtotal				35
Total Revegetation Cost per Acre				175

# Reclamation Estimate for JUMBO MINING COMPANY M/027/007

Prepared By  
Utah State Division of Oil, Gas and Mining  
November 25, 1988 Revised 6-13-89

Description	Quantity	Unit	\$/Unit	Total Cost (\$)
<b>Alto Pit Reclamation</b>				
Remove Trash	3.8	Acres	100	380
Construct Berm on Highwall	450	Linear Feet	4.70	2,120
Plug Drill Holes	20	Each	100	2,000
Rip Roads	900	Linear Feet	0.60	540
Grade for Uniformity	2.9	Acres	430	1,250
Revegetate *	2.9	Acres	175	510
Subtotal				6,800
<b>Keystone Test Pit Reclamation</b>				
Remove Trash	0.9	Acres	100	90
Plug Drill Holes	7	Each	100	700
Rip Roads	400	Linear Feet	0.60	240
Grade for Uniformity	0.5	Acres	430	220
Revegetate *	0.5	Acres	175	90
Subtotal				1,340
<b>Monarch Test Pit Reclamation</b>				
Remove Trash	3.7	Acres	100	370
Plug Drill Holes	5	Each	100	500
Rip Roads	3,500	Linear Feet	0.60	2,100
Grade for Uniformity	3.0	Acres	430	1,290
Revegetate *	3.0	Acres	175	530
Subtotal				4,790
<b>Ibex Decline Reclamation</b>				
Remove Trash	0.5	Acres	100	50
Plug Drill Holes	5	Each	100	500
Construct Seal 100' Inside Portal		Lump Sum		1,000
Backfill Portal	400	Cubic Yards	0.60	240
Revegetate *	0.5	Acres	175	90
Subtotal				1,880
Totals				14,810
Add Contingency (10%)				1,480
TOTAL RECLAMATION COST (1988 Dollars)				16,290
TOTAL RECLAMATION COST (1989 Dollars) @ 2.3% Annual Inflation				17,000
TOTAL RECLAMATION COST (1994 Dollars) @ 1.93% Annual Inflation				19,000



# APPENDIX - A

Western States will reclaim these areas (41.8 acres).

Jumbo Mining will reclaim remaining areas (83.9 acres).



• Drillholes

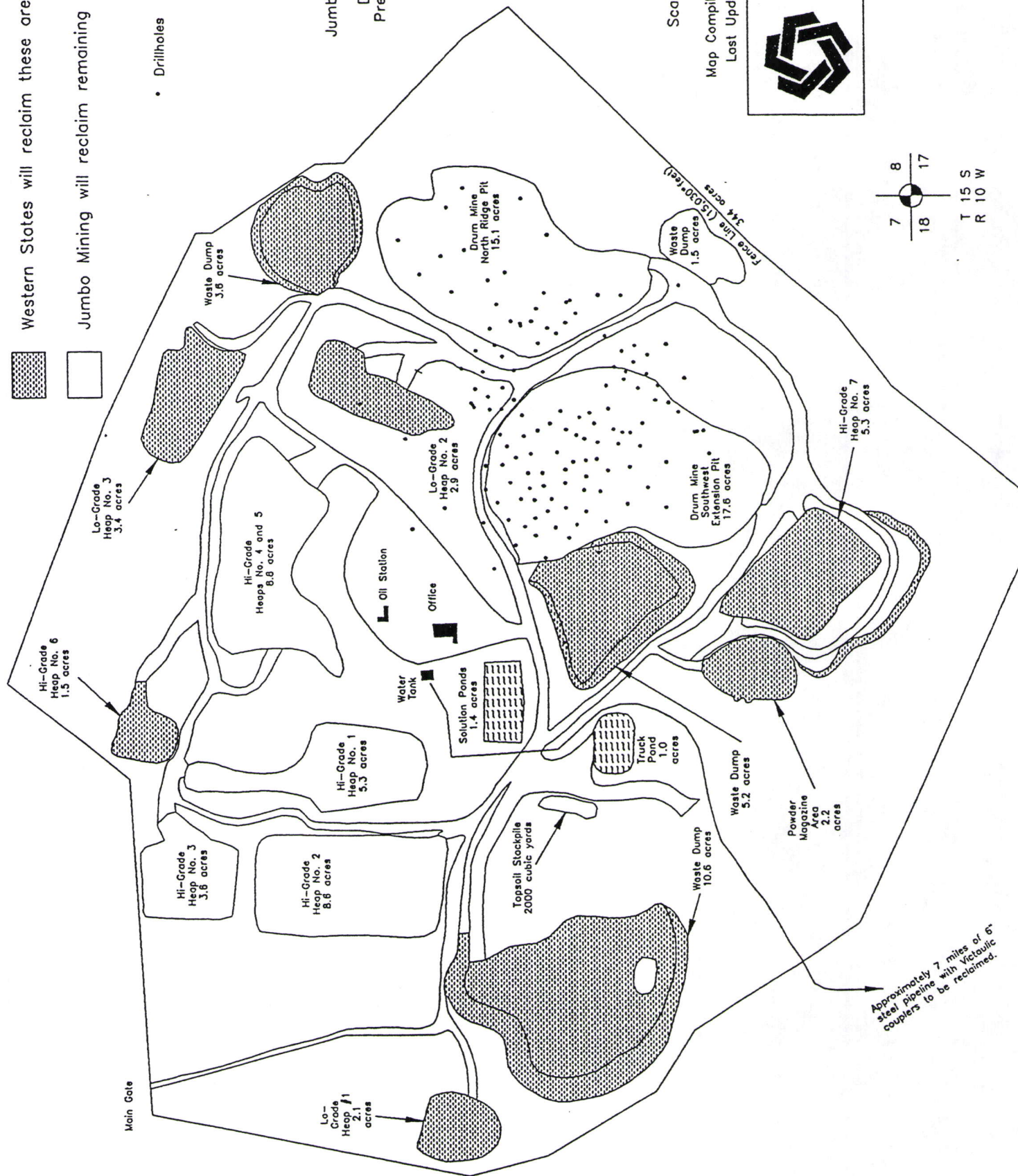
Jumbo Mining Company  
M/027/007  
Drum Mine Site  
Present Disturbance

Scale: 1" = 600'

Map Compiled December 5, 1988  
Last Update: July 26, 1989



State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining



Approximately 7 miles of 6" steel pipeline with Victaulic couplers to be reclaimed.



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Dr. G. A. (Jim) Shirazi, Division Director

241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

November 28, 1983

Mr. Robert Roggenthen, Project Manager  
Western States Mineral Corporation  
4975 Van Gordon Street  
Wheat Ridge, Colorado 80033

RE: Final Approval  
Drum Mine  
ACT/027/007  
Millard County, Utah

Dear Mr. Roggenthen:

This letter is to notify you that the surety bond submitted by Western States Mineral Corporation for the Drum Mine project has been approved by the Board of Oil, Gas and Mining. A copy of the fully executed bond will be forwarded under separate cover. Western States Mineral Corporation has now satisfied all requirements of the Utah Mined Land Reclamation Act. Therefore, the Division of Oil, Gas and Mining hereby issues final approval for this operation.

Please be advised of the requirements of Rule M-8 which provide for the submission of an Annual Operations and Progress Report (MR Form 3), a copy of which is enclosed.

Thank you for your continued cooperation during the permitting process. Should you have any questions, please call.

Sincerely,

JAMES W. SMITH, JR.  
COORDINATOR OF MINED  
LAND DEVELOPMENT

JWS/re

Enclosure

cc: D. Darby, DOGM  
Birrell Hirschi, BLM, Richfield, Utah





STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

Scott M. Maines  
Ample A. Reynolds, Executive Director  
Dr. G. A. (Jim) Shirazi, Division Director

\* MEMORANDUM \*

TO: Jim Smith  
FROM: David W. Darby  
SUBJECT: Information concerning the  
status of Western States Minerals,  
Drum Mine Project ACT/027/007  
DATE: November 14, 1983

Approved by Board  
11-17-83  
Surrety  
JWS

1. The Mine Plan has been reviewed by the technical staff and determined complete.
2. A surety bond has been submitted by Western States Minerals in the amount of \$117,000, a little over the estimated reclamation cost for the life of the mine.
3. An Order to Show Cause was sent to the Millard County Chronicle; a local newspaper and the Salt Lake Tribune and Deseret News; both Salt Lake City newspapers on October 3, 1983. The comment period started October 7, 1983 and ended November 5, 1983. No adverse or aggrieved comments have been received.
4. The Executive Summary has been completed and distributed to the Board Members.
5. It should be recommended to the Board of Oil, Gas & Mining that the surety bond be accepted and mining be allowed.

DAVID DARBY 

DD/jvb

## EXECUTIVE SUMMARY

Mine Name: Drum Mine  
Operator: Western States Minerals Corp.  
4975 Van Gordon Street  
Wheat Ridge, CO 80033  
Telephone: (303) 425-7042  
Contact Person: Bob Roggenthen  
Life of Mine: 26 months  
Legal Description: Section 7, Township 15 South, Range 10 West  
Mineral(s) to be Mined: Gold  
Mining Methods: Strip  
Acres to be Disturbed: 88 total  
Present Land Use: Mining, rangeland  
Postmining Land Use: Rangeland  
Variances from Reclamation Standards (Rule M-10) Granted: Highwall may be left at a 47% slope depending on stability analysis at cessation of mining.  
I.D. No. ACT/027/007  
County: Millard  
New/Existing: New  
Mineral Ownership: Western States  
Surface Ownership: Federal (BLM)  
Lease No.(s): None  
Permit Term: 26 months

### Soils and Geology:

Soil Description: Shallow rocky surface horizon weathered from limestone under arid conditions.  
pH: 7.5-8 surface horizon  
Special Handling Problems: None  
Geology Description: Basin and range structural features. Mine is located in limestone matrix on edge of quartz latite intrusion.

### Hydrology:

Ground Water Description: None encountered, none to be affected.  
Surface Water Description: Ephemeral stream channels characteristic of the area, diversion, culverts and berms used to direct runoff and provide against water diminution.  
Water Monitoring Plan: None; no water will be discharged.

### Ecology:

Vegetation Type(s); Dominant Species: Rabbitbrush, black sagebrush, shadscale, Mormon tea, viscid rabbitbrush, juniper and various grasses.  
Percent Surrounding Vegetative Cover: Perennial shrubs and grasses--24% cover; annuals--10-28% cover; perennial grass--2.4-3.3% cover; junipers--3.5 trees/acre.  
Wildlife Concerns: None  
Surface Facilities: None, permanent

Mining and Reclamation Plan Summary: See attachment.

### Surety:

Amount: \$116,771.00 (see attached estimate)  
Form: Insurance Bond  
Renewable Term: Life of Mine (26 months)



#### DURING OPERATIONS:

1. A total of some eighty-eight (88) acres will be disturbed. Prior to mining, soil material will be removed and stockpiled, stabilized and seeded for reclamation purposes upon termination of operations.
2. Contemporaneous reclamation/test plots will be conducted using a BLM/DOGM approved seed mix. Areas to be reclaimed will be fertilized as per the results of soil testing. The seedbed will be disked prior to drill seeding. A transect will be conducted annually to monitor success of reclamation treatments. Additional treatments will be utilized, should this prove necessary.
3. Signs, berms and fencing will be provided to minimize safety hazard to the public, domestic animals and wildlife.
4. Surface diversions will be emplaced to prevent disturbed runoff from leaving the mining site, whereas undisturbed runoff will be directed around the facilities into natural drainage channels.
5. Potable water will be pumped to the mine site from a well drilled on public lands. The necessary water rights have been appropriated via a lease agreement on file in the office of the County Recorder of Millard County, Utah.
6. The processing facility will operate on the property utilizing a cyanide leach process. Fencing, liners, berms and diversions will be utilized to protect against environmental degradation.
7. The operator will provide a surety bond to cover the estimated reclamation costs to be held by the Utah Division of Oil, Gas and Mining.

#### AFTER OPERATIONS:

1. All buildings, structures and extraneous debris will be removed from the site.
2. Final grading will be done to conform to the existing terrain. Slopes will be contour terraced. In cases where this is not safe or practical, the Division may approve highwalls to be left. Any remnant highwalls will blend in with the existing terrain. Roads will be scarified, fertilized, drill seeded and imprinted to allow for revegetation. If a highwall is left, a security fence will be installed on top of the slope to ensure protection to the public, domestic animals and wildlife.
3. All disturbed areas left upon the cessation of mining activities will be topsoiled and revegetated utilizing methods proven successful in contemporaneous reclamation/test plots. Fences other than used for highwalls will remain in place during monitoring until bond retrieval is achieved to preclude adverse grazing impacts.
4. Runoff water diversions will be removed.
5. The site will be monitored to assure that adequate revegetation ensues to allow the approved post mining land use.

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
4241 State Office Building  
Salt Lake City, Utah 84114

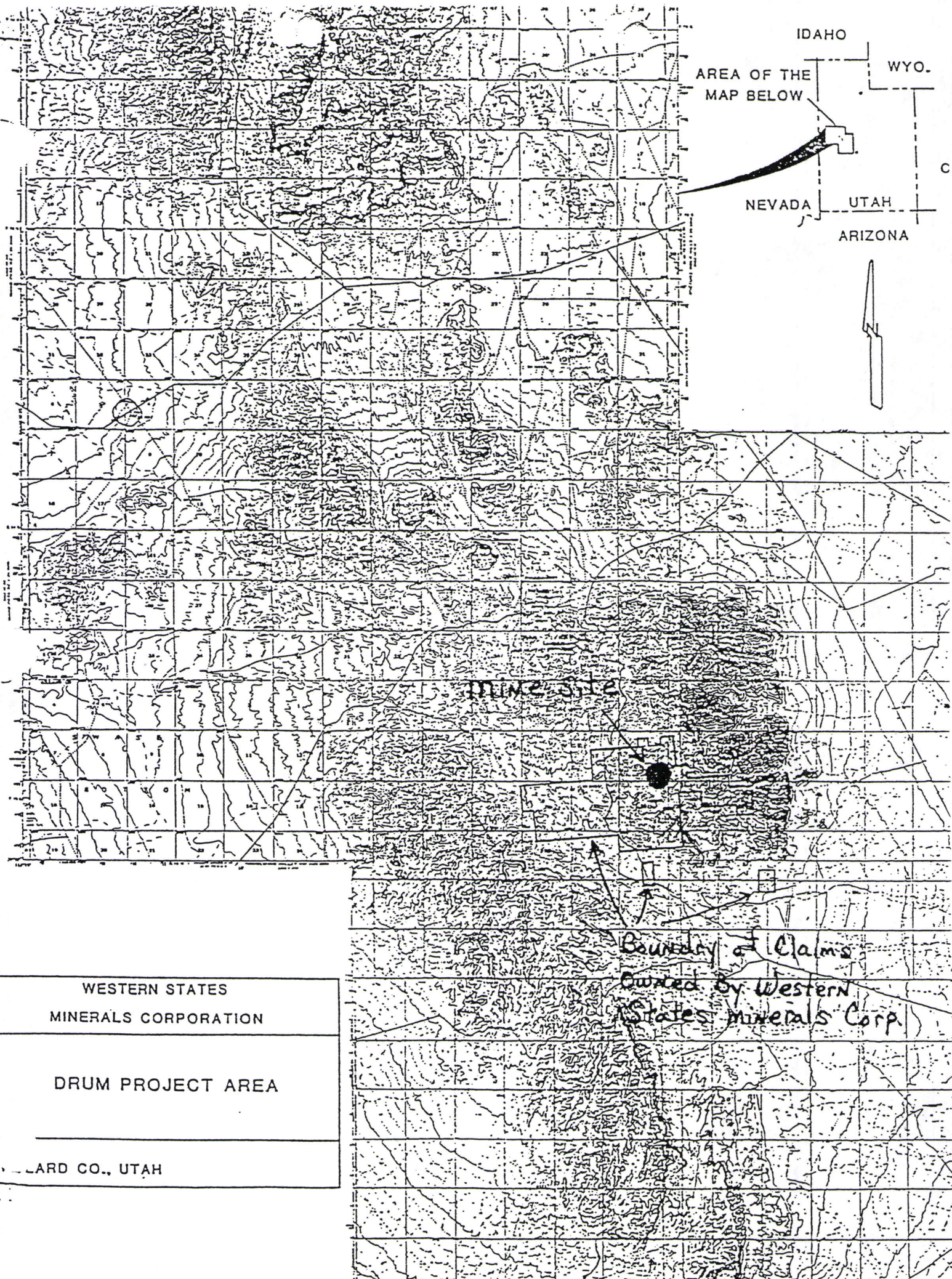
DESCRIPTION	ACRES	COST/ACRE	CUBIC YARDS	COST/CY	TOTAL
Removal of structures and equipment					700
1. Electrical equipment-- mobile generator - 2 poles		- \$500			
2. Major mobile equipment - generator		- \$200			
3. Major stationary equipment - 2 poles					5,000
4. Service mill and office - One temporary office building and shop. 60 hrs. @ \$50.00/hr. = 3000 Strip plant and lab - 40 hrs @ \$50.00/hr. = 2000					250
Removal of trash and - Final cleanup - \$250 (trash buried daily in dump) contaminants (oil, etc.) hauled out periodically as needed. extraneous debris					
Regrading and recountouring of waste rock and waste disposal sites, tailings and sediment ponds. Diversions and areas of critical grade.					
1. Earthwork to final grade - heap leach pads - 7 days = mine and waste dump - 3 days =			\$6,250 (D-9 Cat)		9,930
			\$2,680		
			\$9,930 (final)		



OPERATION	ACRES	COST/ACRE	CUBIC YARDS	COST/CY	TOTAL
2. Topsoil replacement					
a. Procurement (if necessary)					
b. Respreading	29 ac.ft.		46,786	\$1.00	\$46,786
3. Stabilization					
a. Reseeding	45 acres	\$400-			\$18,000
b. Fertilization					
c. Mulching	45 acres	\$50			2,250
d. Irrigation					
4. Safety					
1. Erection of portal coverings and fences	Fencing modification and installation 3500 feet @ \$2.40/foot				8,400
2. Plugging of boreholes and exploratory openings	---				
3. Removal of hazardous materials	---				
4. Elimination of highwalls.	Fencing-8 foot high x 800' @ \$15.63/ft.				12,500

ACTION	ACRES	COST/ACRE	CUBIC YARDS	COST/CY	TOTAL
Foundation elimination and transportation corridor reclamation	---				
1. Burial and/or break-up	---				
2. Removal	---				2,340
Monitoring		3 times @ \$780			
1. Continuing or periodic monitoring sampling and testing deemed necessary					106,156
Site specific variations from aesthetic costs					+10%
Contingency and contractual costs					
Inflation factor					116,771
TOTAL					
				Subtotal	106,156





IDAHO

WYO.

AREA OF THE  
MAP BELOW

NEVADA

UTAH

ARIZONA

C

mine site

Boundary of Claims  
owned by Western  
States Minerals Corp.

WESTERN STATES

MINERALS CORPORATION

DRUM PROJECT AREA

M. LARD CO., UTAH



## A S S I G N M E N T

As consideration for the issuance the Certificate of the State Treasurer, I, Edwin B. King, hereby sell, assign and transfer unto the Utah State Treasurer all of my interest in the following described securities delivered herewith:

XXX

The interest hereby assigned shall be held by the State Treasurer for benefit of the Utah Department of Natural Resources, Division of Oil, Gas, & Mining and the U.S. Department of the Interior, Bureau of Land Management to satisfy any claim for land reclamation upon cessation of mining on the property described as "Drum Mine" (permit number M/027/007), operated by Jumbo Mining Company. Any forfeiture of such surety shall comply with UCA 40-8-16 et seq.

It is understood and agreed that this Assignment will be released by the State Treasurer only upon the written request of the Division of Oil, Gas, and Mining upon satisfaction of the requirements described in Section 40-8-12.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 19\_\_.

My Commission Expires:

\_\_\_\_\_, 19\_\_



STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

RECLAMATION CONTRACT

---oo0oo---

For the purpose of this RECLAMATION CONTRACT the terms below are defined as follows:

"NOTICE OF INTENTION" (NOI): (File No.) M/027/007  
(Mineral Mined) Gold

"MINE LOCATION":

(Name of Mine)	<u>Drum Mine</u>
(Description)	<u>Drum Mountain Project</u>
	<u>Millard &amp; Juab Counties, Utah</u>
	_____

"DISTURBED AREA":

(Disturbed Acres)	<u>Approx. 126 Acres</u>	<u>Drum Mine *(1)</u>
(Legal Description)	<u>Exhibit A</u>	

"OPERATOR":

(Company or Name)	<u>Jumbo Mining Company</u>
(Address)	<u>6305 Fern Spring Cove</u>
	<u>Austin, Texas</u>
	<u>78730</u>
(Phone No.)	<u>(512) 346-4537</u>

\*(1) plus approximately 11 acres for Drum Mountain Project permit amendment

"OPERATOR'S REGISTERED AGENT":

(Name)

(Address)

(Phone No.)

Prentice Hall

Corporate Services

P O Box 102670

Atlanta, Georgia 30368-0670

800-221-0770

"OPERATOR'S OFFICER(S)":

E. B. King

Janet King

"SURETY":

(Form of Surety - Exhibit B)

U. S. Treasury Bills

"SURETY COMPANY":

(Name, Policy or Acct. No.)

Irving Trust (New York) - to hold securities  
as custodial agent for Utah State Treasurer

"SURETY AMOUNT":

(Escalated Dollars)

\$162,000

"ESCALATION YEAR"

1994

"STATE":

State of Utah

"DIVISION":

Division of Oil, Gas and Mining

"BOARD":

Board of Oil, Gas and Mining

EXHIBITS:

Revision Dates:

A "DISTURBED AREA":

B "SURETY":



This Reclamation Contract (hereinafter referred to as "Contract") is entered into between Operator and the Board.

WHEREAS, Operator desires to conduct mining operations under Notice of Intention (NOI) File No. M/027/007 which has been approved by the Division under the Utah Mined Land Reclamation Act, Sections 40-8-1 et seq., Utah Code Annotated, (1953, as amended) (hereinafter referred to as "Act") and implementing rules; and

WHEREAS, Operator is obligated to reclaim the Disturbed Area in accordance with Operator's approved Reclamation Plan and Operator is obligated to provide surety in form and amount approved by the Board, to assure reclamation of the Disturbed Area.

NOW, THEREFORE, the Board and the Operator agree as follows:

1. Operator agrees to conduct reclamation of the Disturbed Area in accordance with the Act and implementing regulations, the Notice of Intention, and the Reclamation Plan.
2. Concurrent with the execution hereof, Operator has provided surety to assure that reclamation is conducted, in form and amount acceptable to the Board, which surety is in the form of the surety attached hereto as Exhibit B and made a part hereof. The surety shall remain in full force and effect according to its terms unless modified by the Board in writing.
3. Operator agrees to pay public liability and property damage claims resulting from mining as determined by the Board or the Division, to the extent provided in the Act.

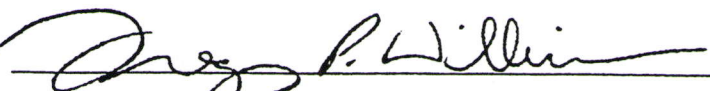
4. Operator agrees to perform all duties and fulfill all reclamation requirements applicable to the mine as required by the Act and implementing rules, the Notice of Intention, and the Reclamation Plan.
5. The Operators liability under this Contract shall continue in full force and effect until the Division certifies that the Operator has reclaimed the Disturbed Area in accordance with the Act and implementing rules, the Notice of Intention and the Reclamation Plan.
6. Operator agrees to indemnify and hold harmless the State, Board and Division from any claim, demand, liability, cost charge, suit, or obligation of whatsoever nature arising from the failure of Operator or Operator's agents, and employees, or contractor to comply with this Contract.
7. Operator may, at any time, submit a request to the Board to substitute surety. The Board, in its sole judgment and discretion, may approve such substitution if the substitute surety meets the requirements of the Act and the implementing rules.
8. This Contract shall be governed and construed in accordance with the laws of the State.
9. If Operator shall default in the performance of the obligations heretofore, Operator agrees to pay all costs and expenses, including attorneys fees and costs generated by the Division and/or the Board in the enforcement of this Contract.



10. Any breach of the provisions of this Contract by Operator may, at the discretion of the Division, result in an order to cease mining operations. After opportunity for notice and hearing, the Division, or Board, as appropriate, may revoke the Notice of Intention, order reclamation, or order forfeiture of the Surety, or take such other action as is authorized by law.
11. In the event of forfeiture of the Surety, Operator shall be liable for any additional costs in excess of the surety amount which are required to comply with this contract. Any excess monies resulting from forfeiture of the Surety, upon completion of reclamation and compliance with this Contract, shall be returned to the rightful claimant.
12. This Contract represents the entire agreement of the parties involved, and any modification must be approved in writing by the parties involved.
13. Each signatory below represents that he/she is authorized to execute this Contract on behalf of the named party.

SO AGREED this 4<sup>th</sup> day of August, 1989.

APPROVED AS TO FORM AND AMOUNT OF SURETY:

By   
Chairman, Board of Oil, Gas and Mining

DIVISION OF OIL, GAS AND MINING:

By

Director

Dianne R. Nielson

Date

8/4/89

STATE OF

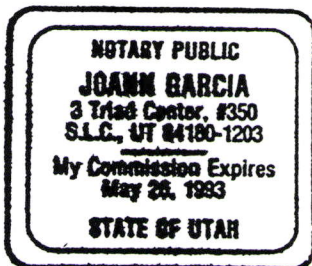
Utah

) ss:

COUNTY OF

Salt Lake

On the 4th day of August, 1989, personally appeared before me, who being by me duly sworn did say that he/she, the said Dianne R. Nielson is the Director of the Division of Oil, Gas and Mining, Department of Natural Resources, State of Utah, and he/she duly acknowledged to me that he/she executed the foregoing document by authority of law on behalf of the State of Utah.



Joann Garcia  
Notary Public  
Residing at: SLC, UT

5/26/93  
My Commission Expires:



OPERATOR:

By E. B. King President

Corporate Officer - Position

July 27, 1989

Date

STATE OF UTAH)

) ss.

COUNTY OF SALT LAKE)

On the 27th day of July, 1989, personally appeared before me E. B. King who being by me duly sworn did say that he/she, the said E. B. King is the President of Jumbo Mining Company and duly acknowledged that said instrument was signed on behalf of said company by authority of its bylaws or a resolution of its board of directors and said E. B. King duly acknowledged to me that said company executed the same.

Joann Garcia  
Notary Public

Residing at: SLC, Utah

NOTARY PUBLIC  
JOANN GARCIA  
3 Triad Center, #350  
S.L.C., UT 84108-1203  
My Commission Expires  
May 28, 1993  
STATE OF UTAH

5/26/93

My Commission Expires:

INSTITUTION:

\_\_\_\_\_  
Surety (Company)

\_\_\_\_\_  
Company Officer - Position

\_\_\_\_\_  
Date

STATE OF \_\_\_\_\_ ) ss:  
\_\_\_\_\_ )

COUNTY OF \_\_\_\_\_ )

On the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, personally  
appeared before me \_\_\_\_\_ who being by me  
duly sworn did say that he/she, the said \_\_\_\_\_ is  
the \_\_\_\_\_ of \_\_\_\_\_  
and duly acknowledged that said instrument was signed on behalf of  
said company by authority of its bylaws or a resolution of its board  
of directors and said \_\_\_\_\_ duly acknowledged to  
me that said company executed the same.

\_\_\_\_\_  
Notary Public

Residing at: \_\_\_\_\_

\_\_\_\_\_  
My Commission Expires:

NOTE: An Affidavit of Qualification must be completed and  
attached to this form for each authorized agent or officer. When  
one signs by virtue of Power of Attorney for a company, such Power  
of Attorney must be filed with this Contract.



**ATTACHMENT**

**EXHIBIT - A**

**RECLAMATION CONTRACT, FORM MR-RC  
DRUM MINE & DRUM MOUNTAIN PROJECT PERMIT AMENDMENT  
JUMBO MINING COMPANY**

**JULY 26, 1989**

Legal Descriptions of Disturbed Areas:

**DRUM MINE** - portions of Section 7, Township 15 South, Range 10 West, Millard County, Utah, SLBM.

**DRUM MOUNTAIN PROJECT AMENDMENT** - portions of Sections: 35 and 36, Township 14 South, Range 11 West, Sections 6, 7 & 8, Township 15 South, Range 10 West, and Section 1, Township 15 South, Range 11 West, Juab and Millard Counties, Utah, SLBM.

PLEDGE PLAN  
for  
Surety Policy - Minerals Program

STATE OF UTAH  
Department of Natural Resources  
Division of Oil, Gas and Mining

and

U. S. Department of Interior  
Bureau of Land Management

Pledgor: Jumbo Mining Company

Depository: State of Utah, Department of the Treasury

Security

Selection: Texas Commerce Bank- Austin; Mr. Randy Robinson; telephone  
512-479-2864.

Securities: U. S. Treasury bills, \$176,000

Operational

- Procedure:
1. Texas Commerce Bank delivers securities as directed by the State of Utah, registered in the names of the State of Utah, Division of Oil, Gas and Mining and the Bureau of Land Management, to the State Treasurer.
  2. The Treasurer will issue a certificate to the Division of Oil, Gas and Mining stating that they have received them as pledge from Jumbo Mining Company
  3. Treasury bills will be in the possession of the State Treasurer.
  4. Prior to maturity Texas Commerce Bank will send a request to the Division of Oil, Gas and Mining to pledge a new security and release existing security in a simultaneous transaction.
  5. Oil, gas and mining notifies the State Treasurer's office of their approval.
  6. State Treasurer notifies Texas Commerce Bank of the approval.
  7. Texas Commerce Bank buys new security and delivers to the State Treasurer for the benefit of Oil, Gas and Mining vs. the money they would receive from maturing security. The State Treasurer accepts Texas Commerce Bank's delivery notice and monies are transferred through the wire transfer system. The Treasurer will wire excess funds to Jumbo Mining Company.



EDWARD W. CLYDE  
ELLIOTT LEE PRATT  
RODNEY G. SNOW  
STEVEN E. CLYDE  
THEODORE BOYER, JR.  
EDWIN C. BARNES  
GARY L. PAXTON  
L. MARK FERRE  
NEIL A. KAPLAN  
JOHN W. ANDERSON  
D. BRENT ROSE  
JAMES L. WARLAUMONT  
H. MIFFLIN WILLIAMS III  
STEPHEN B. DOXEY  
ANNELI R. SMITH

\*ADMITTED IN WASHINGTON, D.C.

# CLYDE, PRATT & SNOW

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

200 AMERICAN SAVINGS PLAZA  
77 WEST SECOND SOUTH

SALT LAKE CITY, UTAH 84101

*Completed  
DAGM  
Transfer Form  
w/ conditions  
attached and the  
"revised" area  
map  
Signed by  
Director  
also  
8/4/*

PHONE 322-2516  
AREA CODE 801

TELECOPIER  
(801) 322-2516 EXT 55

FILE NO.

July 11, 1989

**RECEIVED**  
JUL 11 1989

DIVISION OF  
OIL, GAS & MINING

Department of Natural Resources  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

RE: Jumbo Mining - Drum Mine Transfer of Permit

Gentlemen:

Enclosed please find the Transfer of Notice of Intention Large Mining Operations form MR-TRL, which has been executed by the transferor, Western States Minerals Corporation, and the transferee, Jumbo Mining Company.

I assume this will reach you in time to place this transfer request on the agenda for the July 27 meeting of the board. Should you have any questions regarding this, please do not hesitate to contact me.

Sincerely,

CLYDE, PRATT & SNOW, P.C.

*Steven E. Clyde*  
Steven E. Clyde

SECjl  
Enclosure  
cc: Ed King



**RECEIVED**  
DEC 13 1989

B

DIVISION OF  
OIL, GAS & MINING

Dec. 8, 1989

Mr. Holland Sheperd  
Reclamation Soils Specialist  
State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Dear Mr. Sheperd:

Re: Request for time extension of finalization of permit transfer and release of reclamation surety, Drum Mine, M/027/007, Millard County, Utah.

I must apologize for the continued delay in the resolution of differences between Western States Minerals and Jumbo Mining Company. Western States Minerals has continued to work toward a equitable agreement with Jumbo Mining Company and appears to be within a few weeks of finally settling our differences. At least that is what the attorney has told us.

The other reason for the delay is that our parent company, S.J. Groves decided to sell Western States Minerals. When the sale became imminent I was told to hold off on any resolution until the sale was finalized. It was anticipated that this would be accomplished by Oct. 1, 1989. The sale was actually finalized on Nov. 14, 1989. I was unable to work on any reclamation during this time, however, we did continue the negotiations with Jumbo Mining Company. The continuance of these negotiations has gotten us where we are today. As soon as we can get the differences resolved we plan on initiating the reclamation plan that we discussed on Sept. 12, 1989.

*← This means this winter or spring HWS*

I will keep you informed when anything else develops as I would like to start the reclamation as soon as possible. If you have any questions please call me at (702) 677-0740.

Sincerely,

*Richard D. McNeely*  
Richard D. McNeely



C  
STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Telephone: (801) 538-5340  
Fax: (801) 359-3940

ANNUAL REPORT OF MINING OPERATIONS

The informational requirements of this form are based on provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, as amended, and the General Rules as promulgated under the Utah Minerals Regulatory Program. An operator conducting mining operations under a Notice of Intention must file an annual operations and progress report (FORM MR-AR) with the Division.

I. GENERAL INFORMATION

1. Report Time Period: From (mo./yr.) 1/90 To (mo./yr.) 12/90
2. DOGM File Number (original notice): M/023/013 (SEE ALSO M/027/00)
3. Mine Name: DRUM MINE PROJECT - ALTO/IBEX ADDENDUM
4. Legal Description (Location of Lands Affected):  
     1/4,      1/4, Section 36, Township 14S, Range 11W  
     1/4,      1/4, Section     , Township     , Range       
     1/4,      1/4, Section     , Township     , Range
5. Mineral(s) Mined: GOLD
6. Name of Operator or Company: JUMBO MINING COMPANY
7. Permanent Address: 6305 PEARL SPRING COVE  
AUSTIN, TX 78730

8. Company Representative (or designated operator):

Name: E. B. KING  
Title: PRESIDENT  
Address: SAME AS ABOVE  
Phone: 512-346-4537

☐ Please check if any of the above information has changed since previous year.

II. MINING AND RECLAMATION

1. Was the mine active during the past year? Yes ☐ No ☒

2. If active, how much ore or mineral was mined? NONE

3. Briefly describe any new or additional surface disturbances that occurred during the past year. This description should include the type of work performed, volume of material moved, and the acreage affected.

NONE  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Briefly describe the reclamation work performed during the past year. This description should include acreage reclaimed, methods employed, and an evaluation of the results.

SEE REPORT FOR M/027/007  
\_\_\_\_\_  
\_\_\_\_\_

5. What was the total unreclaimed acreage at years end? SAME AS 1989



6. Briefly summarize mining and reclamation planned for the upcoming year.

DEPENDS ON PERMITS

NOTE: Section III., "Additional Information" applies only to large mining operations.

### III. ADDITIONAL INFORMATION

1. An updated surface facilities map should be attached if there have been significant changes since the previous map was submitted.
2. Any monitoring results or other reports that are required under the terms of the approved notice of intention should also be attached.

### IV. SIGNATURE REQUIREMENT

I hereby certify that the foregoing is true and correct.

Name (Typed or Print):

E. B. KING

Title of Operator:

PRESIDENT

Signature of Operator:

E. B. King

Date:

JANUARY 7, 1991

jb

MNMR-AR

RECEIVED

JAN 24 1992

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Telephone: (801) 538-5340  
Fax: (801) 359-3940

DIVISION OF  
OIL GAS & MINING

ANNUAL REPORT OF MINING OPERATIONS

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I. GENERAL INFORMATION

1. Report Time Period: From (mo./yr.) 1/91 To (mo./yr.) 12/91
2. DOGM File Number: M/027/007
3. Mine Name: DRUM MINE
4. Mineral(s) Mined: GOLD
5. Legal Description (Location of Lands Affected): NONE - NO ACTIVITY  
\_\_\_\_ 1/4, \_\_\_\_ 1/4, Section \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_  
\_\_\_\_ 1/4, \_\_\_\_ 1/4, Section \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_  
\_\_\_\_ 1/4, \_\_\_\_ 1/4, Section \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_
6. Name of Operator or Company: JUMBO MINING CO
7. Permanent Address: 6305 FERN SPRING COVE  
AUSTIN, TX 78730



8. Company Representative (or designated operator):

Name: E.B. KING  
Title: PRESIDENT  
Address: 6305 FERN SPRING COVE AUSTIN TX  
Phone: 512-346-4537

☐ Please check if any of the above information has changed since previous year.

II. MINING AND RECLAMATION

1. Was the mine active during the past year? Yes ☐ No ☒

2. If active, how much ore or mineral was mined? \_\_\_\_\_

3. How much new or additional acreage was affected during past year? NONE

4. Briefly describe any new or additional surface disturbances that occurred during the past year. This description should include the type of work performed, and volume of material moved.

NONE  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. How much acreage was reclaimed during past year? NONE

6. Briefly describe the reclamation work performed during the past year. This description should include methods employed, and an evaluation of the results.

NONE  
\_\_\_\_\_  
\_\_\_\_\_

7. What is the total disturbed acreage at years end? SAME AS STARTING

8. Briefly summarize mining and reclamation planned for the upcoming year.

CONTINGENT ON PERMITTING CLEARANCE  
AND LEGAL ACTION WITH PRIOR OWNERS  
\_\_\_\_\_  
\_\_\_\_\_

**NOTE:** Section III., "Additional Information" applies only to large mining operations.

### III. ADDITIONAL INFORMATION

1. An updated surface facilities map should be attached if there have been significant changes since the previous map was submitted.
2. Any monitoring results or other reports that are required under the terms of the approved notice of intention should also be attached.

### IV. SIGNATURE REQUIREMENT

I hereby certify that the foregoing is true and correct.

Name (Typed or Print): E. B. KING

Title of Operator: PRESIDENT

Signature of Operator: EB King

Date: 1-21-92

jb  
MR-AR



STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Telephone: (801) 538-5340  
Fax: (801) 359-3940

ANNUAL REPORT OF MINING OPERATIONS

The informational requirements of this form are based on provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, as amended, and the General Rules as promulgated under the Utah Minerals Regulatory Program. An operator conducting mining operations under a Notice of Intention must file an annual operations and progress report (FORM MR-AR) with the Division.

I. GENERAL INFORMATION

1. Report Time Period: From (mo./yr.) 1/1/92 To (mo./yr.) 12/31/92
2. DOGM File Number: M/027/007
3. Mine Name: DRUM MINE
4. Mineral(s) Mined: GOLD
5. Legal Description (Location of Lands Affected): ON FILE  
     1/4,      1/4, Section     , Township     , Range       
     1/4,      1/4, Section     , Township     , Range       
     1/4,      1/4, Section     , Township     , Range
6. Name of Operator or Company: JUMBO MINING COMPANY

RECEIVED

JAN 15 1993

DIVISION OF  
OIL GAS & MINING

Permanent Address: 6305 FERN SPRING COVE  
AUSTIN, TX 78730

8. Company Representative (or designated operator):

Name: E. B. KING  
Title: PRESIDENT  
Address: (SAME)  
Phone: 512-346-4537

☐ Please check if any of the above information has changed since previous year.

II. MINING AND RECLAMATION

1. Was the mine active during the past year? Yes ☐ No ☒

2. If active, how much ore or mineral was mined? NONE

3. How much new or additional acreage was affected during past year? NONE

4. Briefly describe any new or additional surface disturbances that occurred during the past year. This description should include the type of work performed, and volume of material moved.

NONE  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. How much acreage was reclaimed during past year? ± 20 ACRES - SEEDING

6. Briefly describe the reclamation work performed during the past year. This description should include methods employed, and an evaluation of the results.

SEE ABOVE

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JAN 15 1995

DIVISION OF  
OIL GAS & MINING



7. What is the total disturbed acreage at years end? SAME 137?

8. Briefly summarize mining and reclamation planned for the upcoming year.

CONTINUED EXPLORATION & ENGINEERING / PERMITTING  
ACTIVITIES ONLY. NEW DISTURBANCES UNCERTAIN.

NOTE: Section III., "Additional Information" applies only to large mining operations.

### III. ADDITIONAL INFORMATION

1. An updated surface facilities map should be attached if there have been significant changes since the previous map was submitted. NONE

2. Any monitoring results or other reports that are required under the terms of the approved notice of intention should also be attached.

NONE

### IV. SIGNATURE REQUIREMENT

I hereby certify that the foregoing is true and correct.

Name (Typed or Print): E.B. KING

Title of Operator: PRESIDENT

Signature of Operator: E.B. King

Date: JANUARY 12, 1993

jb  
MR-AR

**RECEIVED**

JAN 15 1993

DIVISION OF  
OIL GAS & MINING

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
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ANNUAL REPORT OF MINING OPERATIONS

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I. General Information

1. Report Time Period: From (mo./yr.) JAN 1, 1993 To (mo./yr.) DEC 31, 1993
  2. DOGM File Number (Mine No): M/027/007
  3. Mine Name: DRUM MINE
  4. Mineral(s) Mined (or permitted to mine): GOLD
  5. Type of mine ☒ Surface Mine or ☐ Underground Mine
  6. Legal Description (Location of Lands Affected): ON FILE  
\_\_\_\_ 1/4, \_\_\_\_ 1/4, Section \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_  
\_\_\_\_ 1/4, \_\_\_\_ 1/4, Section \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_  
\_\_\_\_ 1/4, \_\_\_\_ 1/4, Section \_\_\_\_\_, Township \_\_\_\_\_, Range \_\_\_\_\_
  7. Name of Operator or Company: JUMBO MINING COMPANY
  8. Permanent Street Address: 6305 FERN SPRING COVE  
City, State, Zip: AUSTIN, TX 78730  
Phone: 512-346-4537
  9. Company Representative (or designated operator):  
Name: E.B. KING  
Title: PRESIDENT  
Business Address: SAME AS ABOVE  
City, State, Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_
- ☐ Please check if any of the above information has changed since previous year.

II. Mining and Reclamation

1. Was the mine active during the past year? Yes ☐ No ☒
2. If active, how much ore or mineral was mined? \_\_\_\_\_



3. How much additional acreage was disturbed during the past year? NONE
4. Briefly describe any new or additional surface disturbances that occurred during the past year. This description should include the type of work performed, and volume of material moved.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
5. How much acreage was reclaimed during the past year? NONE
6. Briefly describe the reclamation work performed during the past year. This description should include methods employed, and an evaluation of the results.
- TEST PLOTS - RESEEDING
- \_\_\_\_\_
- \_\_\_\_\_
7. What is the total disturbed acreage at years end? NO CHANGE
8. Briefly summarize any mining and/or reclamation plans for the upcoming year.
- EXPLORATION, ENGINEERING & PERMITTING
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**NOTE:** Section III., "Additional Information" applies only to large mining operations.

### III. Additional Information

1. An updated surface facilities map should be attached if there have been significant changes since the previous map was submitted.
2. Any monitoring results or other reports that are required under the terms of the approved notice of intention should also be attached.

### IV. Signature Requirement

I hereby certify that the foregoing is true and correct.

Name (Typed or Print):

E. B. KING

Title of Operator:

PRESIDENT

Signature of Operator:

E. B. King

Date:

12-21-93

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Telephone: (801) 538-5340  
Fax: (801) 359-3940

JAN 6 1996

ANNUAL REPORT OF MINING OPERATIONS

The informational requirements of this form are based on provisions of the Mined Land Reclamation Act, Title 40-8, Utah Code Annotated 1953, as amended, and the General Rules as promulgated under the Utah Minerals Regulatory Program. An operator conducting mining operations under a Notice of Intention must file an annual operations and progress report (FORM MR-AR) with the Division.

I. General Information

1. Report Time Period: From (mo./yr.) 1/1/95 To (mo./yr.) 12/31/95
2. DOGM File Number (Mine No): M /027 /007
3. Mine Name: Drum Mine
4. Mineral(s) Mined (or permitted to mine): Gold
5. Type of mine ☒ Surface Mine or ☐ Underground Mine
6. Legal Description (Location of Lands Affected): ON FILE  
1/4, 1/4, Section , Township , Range  
1/4, 1/4, Section , Township , Range  
1/4, 1/4, Section , Township , Range
7. Name of Operator or Company: JUMBO MINING COMPANY
8. Permanent Street Address : 6305 Fern Spring Cove  
City, State, Zip: Austin, TX 78730  
Phone: 512-346-4537
9. Company Representative (or designated operator):  
Name: E. B. King  
Title: President  
Business Address: Same as Above  
City, State, Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_

☐ Please check if any of the above information has changed since previous year.

II. Mining and Reclamation

1. Was the mine active during the past year? Yes ☐ No ☒
2. If active, how much ore or mineral was mined? \_\_\_\_\_



3. How much additional acreage was disturbed during the past year? 0
4. Briefly describe any new or additional surface disturbances that occurred during the past year. This description should include the type of work performed, and volume of material moved.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
5. How much acreage was reclaimed during the past year? None
6. Briefly describe the reclamation work performed during the past year. This description should include methods employed, and an evaluation of the results.
- Test plots - re-seeding
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
7. What is the total disturbed acreage at years end? No Change
8. Briefly summarize any mining and/or reclamation plans for the upcoming year.
- Exploration, engineering, permitting
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**NOTE:** Section III., "Additional Information" applies only to large mining operations.

### III. Additional Information

1. An updated surface facilities map should be attached if there have been significant changes since the previous map was submitted.
2. Any monitoring results or other reports that are required under the terms of the approved notice of intention should also be attached.

### IV. Signature Requirement

I hereby certify that the foregoing is true and correct.

Name (Typed or Print):

E. B. King

Title of Operator:

President

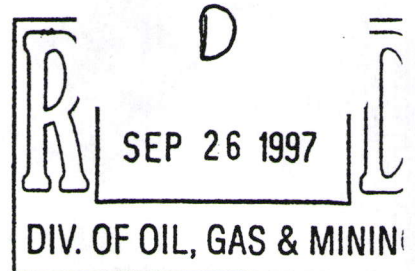
Signature of Operator:

E. B. King

Date:

January 9, 1996

Reg Sept 24, 97  
BEFORE THE DIVISION OF OIL, GAS & MINING  
DEPARTMENT OF NATURAL RESOURCES  
STATE OF UTAH



In the Matter of the Notice of Agency Action to Enforce Violated Minerals Rules, Drum Mine, M/027/007, Millard and Juab Counties, Utah.	WESTERN STATES MINERALS CORPORATION'S APPEAL OF AGENCY ACTION and MOTION TO STAY  Docket No. 97-009 Cause No. M/027/007
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Western States Minerals Corporation, ("WSMC"), by and through its counsel, hereby notifies the Director of the Division of Oil, Gas and Mining, Utah Department of Natural Resources ("DOGM" and "DNR" respectively), of its intention to appeal the above-captioned Agency Action, notice of which was served on WSMC September 15, 1997. WSMC requests a hearing before the Director DOGM for the purposes of presenting its arguments on appeal. WSMC also requests that the Division's contemplated action be stayed indefinitely, pending the consolidation of this action with a pending formal proceeding before the Board.

A. WSMC objects to the DOGM regarding calculation of bond amount, and bases its appeal on the following grounds:

1. The Agency's action is arbitrary, capricious, an abuse of discretion and contrary to law.
2. The Agency is without authority to require WSMC to increase its bond.
3. The Agency's action is precluded by proceedings pending before the Board of Oil, Gas and Mining, Docket No. 97-009, Case No. M/027/007, in which the Division is seeking a determination by the Board that the Drum Mine has ceased operations, and an order from the Board to Jumbo Mining Company ("JMC"), the current



operator, and WSMC to reclaim the Drum Mine. The Division's current "Notice of Agency Action" is a subterfuge to reach by informal agency action the result they are seeking from the Board, and is duplicative and unnecessary.

B. WSMC requests that the Division's decision be stayed indefinitely. This Agency action is closely related to a request by the Division to the Board for formal agency action. All questions of whether or not activity has ceased at the site, which company is responsible for reclamation, and the correct amount of surety, should be addressed in logical order before the Board. A piecemeal approach is inefficient, wasteful, and potentially harmful to the interests of all parties.

C. For these reasons, WSMC seeks an appeal and stay of the Division's action.

Requested this 24 day of September, 1997.

ALFERS & CARVER, LLC.

A handwritten signature in black ink, appearing to read "Christopher G. Hayes", is written over a horizontal line.

Christopher G. Hayes  
730 Seventeenth Street, Suite 340  
Denver, CO 80202  
(303) 592-7674

Attorneys for Western States Minerals  
Corporation

Certificate of Mailing


I hereby certify that I have this day served the foregoing instrument upon all parties of record in this proceeding by mailing a copy thereof, properly addressed, with postage prepaid, to:

H. Michael Keller, Esq.  
Van Cott, Bagley, Cornwall & McCarthy  
Attorneys for Western States Minerals Corp.  
50 South Main St., Suite 1600  
Salt Lake City, UT 84144

Thomas A. Mitchell, Esq.  
Asst. Attorney General - State of Utah  
Attorney for Division of Oil, Gas & Mining  
160 East 300 South, Sixth Floor  
P.O. Box 140857  
Salt Lake City, UT 84114-0857

Lawrence J. Jensen, Esq.  
Holland & Hart  
Attorney for Jumbo Mining Company  
215 South State Street, Suite 500  
Salt Lake City, UT 84111

Z. Lance Samay, Esq.  
Attorney for Jumbo Mining Company  
1 Washington Street  
PO Box 130  
Morristown, NJ 07963

  
Lisa A. Beckman, Legal Secretary

The original and one copy of the foregoing instrument was sent, via facsimile transmission and certified U.S. mail, return receipt requested, and postage prepaid to:

Lowell P. Braxton, Acting Director  
Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
Salt Lake City, UT 84114  
(801) 359-3940 fax

Daniel G. Moquin, Esq.  
Asst. Attorney General  
Attorney for Division of Oil, Gas & Mining  
1594 West North Temple, Suite 300  
Salt Lake City, UT 84114-0855  
(801) 538-7440

  
Lisa A. Beckman, Legal Secretary

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Z. LANCE SAMAY  
ATTORNEY AT LAW  
A PROFESSIONAL CORPORATION

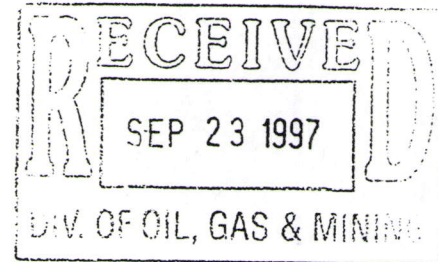
ONE WASHINGTON STREET  
POST OFFICE BOX 130  
MORRISTOWN, NEW JERSEY 07963-0130

OF COUNSEL:  
WOLF SAMAY, ESQ.  
ELIZABETH A. KENNY, ESQ.

TELEPHONE: 201-540-1133  
TELECOPIER: 201-540-1020

September 20, 1997

Lowell P. Braxton, Acting Director  
Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
Post Office Box 145801  
Salt Lake City, UT 84114  
Telephone No.: 1-801-538-5370



Re: NOTICE OF AGENCY ACTION TO ENFORCE VIOLATED MINERAL RULES,  
Drum Mine, M/027/007, Millard and Juab County, Utah

Dear Mr. Braxton:

On behalf of Jumbo Mining Company ("Jumbo"), this shall serve to notify you of Jumbo's disagreement with and objection to the determinations and underlying "findings and analysis" made by the State of Utah, Department of Natural Resources Division of Oil, Gas and Mining ("the Division") which are the subjects of your certified letter P 074 977 198 to Jumbo's President, Edwin B. King, dated September 12 and received by Mr. King on September 14, 1997 ("the Notice"). More particularly, but without limitation, Jumbo takes issue with: (a) the Division's twenty-one page "FINDINGS AND ANALYSIS DRUM MINE M/027/007 September 11, 1997"; (b) the Division's finding "that the amount of posted reclamation surety is inadequate to satisfy R647-4-113 and the reclamation plan [for the Drum Mine] needs to be updated pursuant to R647-4-102"; and (c) the Division's requirements "in accordance with [the foregoing] finding [sic]."

This shall also serve to request an informal hearing before the Division's Director pursuant to R647-5-10.2.11.116, and sections 63-46b-4 and 63-46b-5 of the Utah Code Annotated (1953, as amended) and other applicable provisions of the laws and regulations governing the actions of the Division.

In addition to such issues as the Division's constitutionally impermissible violation of principles of fundamental fairness and its arbitrary and capricious action, Jumbo's disagreement with and objection to the findings and determinations set forth in the Notice are based, among numerous reasons, upon the following:

1. It is Jumbo's understanding that the reclamation costs were calculated by an engineer who had never seen the property before



Lowell P. Braxton, Acting Director  
Division of Oil, Gas & Mining  
Page Two  
September 20, 1997

making the calculations, and thus could not have been properly apprised of the local conditions.

2. The calculations were based on average costs for other reclamation sites around the country, and not on the Caterpillar Performance Handbook costs which are the generally accepted bases for calculating reclamation costs.

3. Costs have been included for detoxification of heaps, despite the fact that Jumbo has submitted the best available and unchallenged evidence extending over five years that these heaps were in fact detoxified before they were shut down. No contrary evidence has ever been submitted.

4. The disturbed area of the Drum Mine has not increased since 1987 aerial mapping by an independent service and 1989 calculations by the Division were concluded. No new reclaimable disturbances have been created since then at the Drum Mine.

5. The volume of the ore and waste has not changed since 1989 except that which was added on top of Heap HG 2, a detoxified heap which still has the same area as it did in 1989.

6. There is no need to flush the heaps to further detoxify them, as has been amply demonstrated over the last five years by hundreds of analyses of the drainage from all heaps after heavy rainstorms.

7. Subsequent to the shut down of leaching at the Drum Mine, the Division of Water Quality ("DWQ") never ordered the heaps to be flushed. All flushing which did occur was done in accordance with DWQ permit conditions prior to shut down, and, as indicated above, the effectiveness of such flushing has been amply demonstrated by hundreds of analyses of rainstorm drainage.

8. There is no requirement in any prior permit to cap or relocate the heaps, and there is nothing in the record which would indicate that this is required to meet permit requirements.

9. The reclamation plan accepted by the Division in 1989 is clear and concise, and is still applicable, considering that there have been no new disturbances or significant changes in conditions in the area.

In consideration of all of the above, Jumbo believes that the reclamation bond that was established for the Drum Mine by the Division in 1989, accepted by both Jumbo and Western States Minerals Corporation ("Western"), and approved by the State of



Lowell P. Braxton, Acting Director  
Division of Oil, Gas & Mining  
Page Three  
September 20, 1997

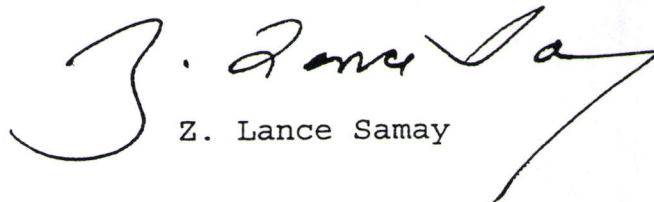
Utah, Department of Natural Resources Board of Oil, Gas and Mining is still applicable, subject only to the inclusion of "reasonable" costs for the two items, addressed below, that were not included in the 1989 estimate of reclamation costs, namely, the missing topsoil which Western failed to set aside as provided by its permit, and the contamination of a perched zone of saturation.

With regard to top soil, since 1989 Jumbo has located and proved to the Division the adequacy of sufficient topsoil to meet the Division's estimated requirements of 55,000 cubic yards. This topsoil is available within the area previously included for reclamation, so that no new reclamation costs would be involved, other than the cost of less than \$25,000 to mine and spread this topsoil. The record should show that this additional reclamation cost has already been reviewed and accepted by the Division.

With regard to the contamination of the perched zone of saturation, Jumbo's extensive monitoring of the affected area since 1989 has shown that the contamination which had apparently occurred before Western had sold the Drum Mine to Jumbo, dissipated in the years following 1988, after DWQ had ordered Western to shut down certain leaking heaps which Western had constructed and operated illegally, i.e., without permits. Considering the current evidence, there is no legitimate reason to require any increase in bonding for this factor.

Inasmuch as many of the findings upon which the Division has predicated its action are vague, and, therefore, not susceptible to ready and definitive analysis, the foregoing is not intended to be a comprehensive list of all objections to the Notice. Jumbo is, however, of the belief that the foregoing should be sufficient to prompt the Division to reconsider what is a fundamentally flawed and totally unwarranted course of action.

Sincerely yours,



Z. Lance Samay

JC092097.B1B

Xc: Edwin B. King

All recipients of Notice of Agency Action dated 09/12/97

Federal Express Airbill No.: 4975479865





State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
James W. Carter  
Division Director

1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801  
801-538-5340  
801-359-3940 (Fax)  
801-538-7223 (TDD)

September 12, 1997

M/027/007

F

CERTIFIED RETURN RECEIPT

P 074 977 198

E.B. King, President  
Jumbo Mining Company  
6305 Fern Spring Cove  
Austin, Texas 78730

CERTIFIED RETURN RECEIPT

P 074 977 199

Allan R. Cerny  
Western States Minerals Corporation  
4975 Van Gordon Street  
Wheat Ridge, Colorado 80033

Re: NOTICE OF AGENCY ACTION TO ENFORCE VIOLATED MINERALS RULES,  
Drum Mine, M/027/007, Millard and Juab County, Utah

Dear Messrs. King and Cerny:

Pursuant to the obligations of the Division of Oil, Gas and Mining ("the Division") under R647-4-102, the Division has reviewed the Notice of Intention for the Drum Mine, M/027/007, Millard and Juab County, Utah. The Division identified several compliance problems. This Notice of Agency Action will address these problems. Based on findings and analysis of the existing mining and reclamation plans for large mining operations at the Drum Mine permitted by Jumbo Mining Company ("JMC") and Western States Mining Company ("Western"), the Division finds that the amount of posted reclamation surety is inadequate to satisfy R647-4-113 and the reclamation plan needs to be updated pursuant to R647-4-102. These findings are based on the Division's Findings and Analysis for the Drum Mine, as attached, and are conducted under the provisions of R647-4-102.

In accordance with these findings the Division requires that:

(1) JMC and Western, within thirty days, increase the reclamation surety amount, subject to approval by the Board of Oil, Gas and Mining, to \$2,674, 000.00 in the aggregate, to meet reclamation surety requirements under the terms and conditions of their approved permits, the Utah Mined Land Reclamation Act and the supporting R647 regulations, and the requirements of other state and federal agencies as applicable. The Division calculates that Western's share of the bond equals \$1,337, 000.00 and JMC's share is \$1,337,000.00.

(2) JMC and Western, within thirty days, file a schedule for the submission of a complete and updated reclamation plan.

(3) Pursuant to R647-4-102, JMC and Western, within thirty days, correct the other permit deficiencies identified in the attached FINDINGS AND ANALYSIS, DRUM MINE.



### Opportunity to Appeal Division's Decision

R647-5-10.2.11.116 Jumbo Mining Company and Western States Mining Company may request an informal hearing before the Division's Director within ten (10) days of the date of this letter (or formal publication). Failure to make such a request for hearing will preclude right for any further participation, appeal or judicial review regarding this adjudicative proceeding.

### Informal Hearing Conducted Before The Division's Director

R647-5-104.2.11.5 The adjudicative proceeding will be conducted informally according to the provisions of these Rules and Sections 63-46b-4 and 63-46b-5 of the Utah Code Annotated (1953, as amended).

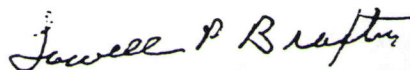
### Legal Authority and Jurisdiction

R647-5-104.2.11.117 Pursuant to Section 40-8-5, Utah Code Annotated (1953, as amended), and accordance with Utah Administrative Rules R647-4-113 and R647-4-102.

### Additional Information

The Division incorporates by reference "EXHIBIT 1". The Division's file number for the case is M/027/007. Accordingly, Jumbo Mining Company and Western States Minerals Corporation have a right to appeal the Division's decision on this matter by requesting an *informal* administrative hearing before the Division. A *written* appeal to this decision must be filed with the office within 10 days of your receipt of this certified letter. If no hearing is requested, then the Division's decision will become final.

Sincerely,



Lowell P. Braxton, Acting Director  
Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
P.O. Box 145801  
Salt Lake City, Utah 84114  
Telephone: (801) 538-5370

dr

Enclosures: (1) Exhibit 1 - Certificate of Service  
(2) Findings and Analysis, Drum Mine

p:drum-inf.naa

## FINDINGS AND ANALYSIS

### DRUM MINE

M/027/007

September 11, 1997

## SUMMARY

The Drum Mine currently is permitted by two operators, Western States Minerals Corporation (WSMC) and Jumbo Mining Company (JUMBO). In July, 1989, portions of the permit area held by WSMC were transferred to JUMBO. This Findings and Analysis is presented as a matter of process as provided for under R647-4-102, Duration of the Notice of Intention, to determine whether the exiting Notice of Intentions for the Drum Mine meet the surety requirements and performance standards of the R647 Non-Coal Rules.

The conditions of partial permit transfer, dated July 25, 1989, clearly show that issues pertaining to reclamation responsibility were not completely resolved at the time of transfer. Moreover, ensuing events have undermined the assumptions of the reclamation plan.

Subsequent to partial transfer of the permit, the Division of Water Quality ordered cessation of the active leach pads in 1990. Cessation of the leaching operations left the leach pads inoperable and with no adequate closure plan for the leach pads during reclamation.

Applications to revise the plans by installing additional heap leach pads were found inadequate by the Division and indicated that numerous deficiencies pertaining to information found in the existing plan would need to be corrected prior to approval. Resolutions to inadequacies found in the plans for both WSMC and JUMBO have not been forthcoming since the partial permit transfer in 1989.

Review of the Notice of Intent by WSMC and the Notice of Intent by JUMBO found that the mining and reclamation plans for both operators were inadequate to clearly segregate the two permitted areas. Although the partial permit transfer indicated that certain features and facilities within the site were specific to WSMC or specific to JUMBO, neither plan accurately delineates these features as they currently exist nor demonstrate that reclamation can be accomplished within those specified areas.

Evaluation of the Drum Mine considers reclamation costs and treatments for the entire site. Assumptions made by the Division to ensure that adequate bond is available necessitate that the collective areas of both permits be used to achieve reclamation. Regrading of heaps and waste dumps and the utilization of available borrow materials for adequate cover and soil requirements to meet reclamation standards clearly indicate that areas currently delineated in either permit would have to overlap each other to achieve reclamation.



The revised bond amount as determined in this review is significantly higher than previous bond amount estimates. This increase in the bond amount is due to several factors, including but not limited to: adding costs associated with detoxification of the cyanide heap leach pads to the bond costs; having a disturbed area significantly larger than was previously assumed; finding that the volume of materials (ore and waste) mine is greater than was proposed in the original operation plan; site conditions such that the cyanide heap leach pads cannot be flushed and neutralized as proposed in the plan due to restrictions on operations as ordered by the Division of Water Quality; providing alternate plans to cap or relocate the leached ore require significant increases in earthmoving requirements; and, the lack of a clear and concise reclamation plan calls for conservative estimation of the reclamation treatments necessary to assure that the amount of surety required for the operations is adequate.

Two scenarios were used in evaluation of the bond amount. SCENARIO A assumes that the leached ore will be relocated to the mine pit areas for disposal. SCENARIO B assumes that the leach pads can be adequately capped or covered in place during reclamation. Both scenarios assume that detoxification of the leached ore will be necessary to achieve reclamation.

The reclamation bond cost estimates for the two alternative plans are as follows:

SCENARIO A	\$8,231,000
SCENARIO B	\$2,674,000

To date, it is the opinion of the Division, that WSMC and JUMBO have failed to adequately address the requirements of the R647 rules, and are currently inadequately bonded for the surface disturbance and existing conditions at the Drum Mine site.

The Division has evaluated and concluded that the aggregate bond amount required for the Drum Mine site must be increased to \$2,674,000 as provided in SCENARIO B of the bond estimate. Based on the parameters used in estimating the surety amount, the Division finds that each operator should increase their respective bond amount to \$1,337,000.00.

Any further adjustment to the bond estimates shown above will require that specific and concise reclamation plans be submitted to the Division for review and approval. Analysis and evaluation of the existing site conditions must be accomplished by the operators to verify and develop a workable reclamation plan. Once a revised reclamation plan is provided which meets the requirements of the Minerals Program, the Bureau of Land Management, and the Division of Water Quality, the bond amount would be re-evaluated and adjusted to reflect an approved plan.

**ANALYSIS AND FINDINGS OF PERMIT DEFICIENCY****R647-4-105 - Maps, Drawings and Photographs****Findings:**

As provided for under R647-4-102, and in accordance with the requirements of R647-4-105, each operator, shall at a minimum, provide a reclamation activities and treatment map to identify the location and the extent of the reclamation work to be accomplished by the operator upon cessation of mining operations. This drawing shall be utilized to determine adequate bonding and reclamation practices for the site.

**Analysis:**

No suitable designs or drawings exist with the plans to demonstrate that the site can adequately be reclaimed. No approved closure plans for the heap leach pads exist to determine the extent of the work required to conduct reclamation. Without adequate maps and plans delineating the location and the extent of the mining and reclamation activities to be conducted within each permit area, numerous assumptions were required by the Division to determine the surety requirements for the site.

**R647-4-110 - Reclamation Plan****Findings:**

As provided for under R647-4-102, and in accordance with the requirements of R647-4-110, the existing mining and reclamation plans fail to suitably demonstrate that reclamation can be accomplished on the Drum Mine site. At a minimum, the plans must be provided to include maps or drawings as necessary and consist of a narrative description of the proposed reclamation. All applicable requirements under this section of the regulations must be adequately addressed. Specifically, a description of the treatment, location and disposition of any deleterious or acid-forming materials generated and left on-site, including a map showing the location of such materials upon the completion of reclamation. The plans must be clear and concise and demonstrate that the proposed reclamation treatments can be achieved.

**Analysis:**

The existing reclamation plans do not incorporate an adequate closure plan for the cyanide heaps. Such a closure plan must be incorporated into the plans for review and approval by the Division, DWQ, and the BLM.

The plans need to address the location, characterization and amount of suitable cover and



soil materials within the permit area. Mass balance calculations need to be developed for regrading the waste dumps, heaps and other disturbed areas in a manner compatible with the postmining land use.

All reclamation treatments necessary to accomplish reclamation must be presented in the plans. Plans must be included to demonstrate that suitable detoxification of all contaminated materials will occur. Analysis of the existing conditions must be presented in the plans to support the proposed reclamation treatments.

The plans must include tonnages/volumes of ore and waste materials generated and their respective location and disposition.

Quantities, equipment selection, productivity, and unit cost information must be developed in the reclamation plans to support the reclamation treatments proposed as a basis for determination of the reclamation costs.

#### **R647-4-111 - Reclamation Practices**

##### **Findings:**

As provided for under R647-4-102, and in accordance with the requirements of R647-4-111, the existing mining and reclamation plans fail to demonstrate that the reclamation practices and standards required under this section of the regulations will be met. The plans must be revised to demonstrate that these reclamation standards are being met. In the event that such standards cannot be met, the plans must clearly indicate so and specifically request a variance from the reclamation standards as allowed for under R647-4-112 of the Non-Coal Rules.

##### **Analysis:**

The plans need to clearly indicate how the operation will comply with the reclamation practices as detailed in the Non-Coal Rules. Additionally, any specific permit conditions, stipulations or requirements by other state and federal agencies must be addressed in the plan. These conditions include those restrictions and conditions placed on the permit by the BLM and DWQ.

The plans need to address pit highwalls, the reduction of the slopes of the dumps and heaps to 3:1, the identification and location of all structures, facilities, roads and other features to be removed or retained following reclamation.

The plan needs to specifically outline and quantify all reclamation treatments to be used during reclamation activities, including, but not limited to: demolition and removal, elimination of trash and debris, treatments for hazardous or unsuitable materials, soil replacement, vegetation

treatment, drainage and erosion control, and the re-establishment of natural drainages through the permit area as part of reclamation.

#### **R647-4-113 - Surety**

##### **Findings:**

As provided for under R647-4-102, and in accordance with the requirements of R647-4-113, the Division finds that the current amount of reclamation surety posted is inadequate. The Division shall require an increase in the reclamation surety to an aggregate amount of \$2,674,000.00 for the Drum Mine site. Respectively, WSMC shall be required to increase their reclamation surety amount to \$1,337,000.00 and JUMBO shall be required to increase their reclamation surety amount to \$1,337,000.00.

##### **Analysis:**

Determination of the bond amount for the Drum Mine requires several assumptions due to the lack of site specific information regarding reclamation of the facilities. It is important to note that the assumptions made in determination of the bond amount are preliminary (pre-design) in nature and do not assure that their application will comply with all the requirements of the Division, DEQ/DWQ, BLM, or other agencies' requirements. The intent of these assumptions (having failed to provide an approvable reclamation plan) is to apply a feasible scenario to achieve reclamation and to determine an appropriate bond amount to assure that reclamation can successfully be achieved. Assumptions made in determination of the bond amount are listed hereunder.

Evaluation of the Drum Mine considers reclamation costs and treatments for the entire site. Deficiencies in the operation and reclamation plans for both operators as explained in these analyses and assumptions made by the Division to estimate the bond amount necessitate that the collective areas of both permits be used to achieve reclamation. Regrading of heaps and waste dumps and the utilization of available borrow materials for adequate cover and soil requirements to meet reclamation standards clearly indicate that areas currently delineated in either permit would have to overlap each other to achieve reclamation.

The location and extent of the mining operations was determined using aerial photography and mapping information obtained from photography taken by Olympus Aerial Surveys on July 22, 1987. While both Western States Minerals Corporation (Western) and Jumbo Mining Company (Jumbo) both contend that little changes to the overall surface area have occurred since the date of the photography, the Division has been unable to obtain updated or current maps and plans showing existing conditions.

The amount of ore and waste materials removed and placed in heaps and dumps during the course of mining operations is also unclear in the operation plan. Ore was segregated into



two types, high and low grade. Volumes of ore were estimated based on the July 22, 1987 drawings and are provided in the bonding calculations. All of the high and low grade leach pads have been leached to some extent with the exception of LG-1, which was found to be below the elevation of the recovery ponds. The volume of LG-1 is estimated at about 53,000 cubic yards of material. This material was planned to be relocated at a later date to allow leaching. The total volume of ore material was estimated from the drawings as 2,269,000 cubic yards and the volume of waste material as 1,837,000 cubic yards.

Detoxification of the cyanide heap leaches prior to reclamation activities is indicated in the plan but has not been accomplished to date. The estimated costs associated with detoxification are included in this revised bond amount.<sup>1</sup>

The specific methodologies involved in detoxification of the heaps has not been well established in the plan but it was previously assumed that by flushing of the heaps with water, carbon dioxide absorbed in the water will reduce the pH of the solutions to approximately 8.0-8.5 and that oxidation of the cyanide concentrations will also occur by flushing the heaps. Effluent criteria for neutralization of the cyanide will most likely be based on 0.2 mg/l weak acid dissociable (WAD) cyanide, unless required otherwise by other federal or state limitations. Flushing of the heaps normally occurs immediately following the leaching process, but has not been the case for

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<sup>1</sup> On August 14, 1990 BLM issued a Modification of Bonding Policy for Plans of Operation Authorized by 43 CFR Part 3809. This modification requires operators who use "cyanide/other leachates" to post a bond equal to 100 percent of estimated closure costs. The bonding policy modification was applicable to leach heaps, pads, and cyanide-bearing tailings impoundments and ponds, but did not apply to vat leach facilities using cyanide.

BLM policy requires bonds for the full cost of reclamation, including heap and solution detoxification and neutralization to State and Federal standards, for all cyanide operations on Federal lands. BLM requires that cyanide solutions and heaps be neutralized or detoxified prior to solution release to the environment. Neutralization of cyanide solutions is also required for any prolonged period of inactivity and for temporary or final closure. Specific concentrations for neutralization or detoxification levels are not specified in BLM policy. Heaps must be neutralized upon completion of each heap. Flushing alternatives may be used, but heap materials and/or discharges must meet the appropriate state and EPA discharge limits. The conditions necessary for release of bond were not addressed in the BLM policy.

Monitoring of groundwater and surface water through closure and final reclamation is required. Specific monitoring requirements such as the frequency, location, chemical parameters, and analytical methods were not outlined in the policy and are left to the discretion of the state and BLM district offices. Additional details on detoxification, closure, and reclamation of cyanide operations are not addressed in the BLM policy.

In 1992, BLM issued its Solid Minerals Reclamation Handbook with guidance on reclamation of mining sites on Federal and Indian lands (BLM 1992). The manual specifically addresses cyanide heap and vat leach systems and provides general reclamation guidance and approaches. According to the BLM, the mine reclamation plan should cover cyanide detoxification of residual process solutions, ore heaps, tailings impoundments, and processing components. BLM strongly encourages laboratory and pilot test studies of selected/proposed detoxification. Concurrent reclamation during active mining also is recommended. In the Handbook, BLM does not require any specific metal or cyanide concentrations that must be achieved. Criteria are established on a site-specific basis reflecting any special concerns of the area. The Handbook is written as a general "how to" manual as opposed to setting specific requirements of procedures that must be followed. It discusses the various methods of treatment available (hydrogen peroxide, natural degradation with fresh water rinse, alkaline chlorination, etc.) and outlines the various phases of reclamation (treatment of cyanide solutions, disposal of treated solutions, spent heap and tailings, shaping and revegetation, surface water diversions, process ponds, and liner disposal).

BLM recommends allowing an extended period of time, six months or more, between cessation of neutralization and evaluation of effluent when determining the success of neutralization or detoxification. The extended period should cover a spring run-off or substantial precipitation event. Once this has been done, surface reclamation can begin. (BLM 1992)



these operations.

The state Department of Environment Quality (DEQ), Division of Water Quality (DWQ) ordered cessation of leaching operations for the site in July, 1990. Under these constraints, flushing of the leach pads for detoxification cannot occur as proposed in the plan. Evaluation of the existing conditions will be required in order to determine an acceptable method for neutralizing the cyanide heaps or preventing contamination from them. Until such time as a site characterization and evaluation of the heaps is accomplished, the specific methodology for mitigation and reclamation of the heaps cannot be determined. The reclamation cost estimate provides for a lump sum cost for the evaluation and treatments which may be necessary for reclamation but cannot be included in detail at this time.

For the purposes of evaluation of the bond amount required, two scenarios were evaluated. SCENARIO A - Relocation of all leached heaps to the pit areas for final reclamation, and, SCENARIO B - Regrading and capping of all leached heaps in existing locations.

SCENARIO A has the advantage of physically removing the leached ore from the pads and placing the materials in the pits. By removing the ore to the pad liners, any perched water held by the leach pads can be decanted and treated during the removal process. However the methods used to accomplish this have not been determined at this time and cannot be determined without a complete evaluation of all the heaps as they currently exist. Placing the ore back into the pit also eliminates the hazards associated with the pit operations and allows for regrading and revegetation of most of the pit areas. This scenario was discussed with the BLM and DWQ and was considered as the preferred alternative for reclamation.

SCENARIO B assumes that a method can be employed to either neutralize or eliminate the perched water beneath the heap pads. However the methods used to accomplish this have not been determined at this time and cannot be determined without a complete evaluation of all the heaps as they currently exist. Following treatment of the perched water beneath the pads, capping would be accomplished over all leached heaps to prevent any further contamination of surface or groundwater. This scenario leaves most of the pit areas as they currently exist and also unrevegetated.

Under the assumptions of either SCENARIO A or SCENARIO B, the most significant costs involved in determination of the bond amount involve earthmoving activities. Because specific reclamation treatments for much of the reclamation work required have not and cannot be determined until such time as a detailed reclamation plan is provided, the evaluation and the determination of the bond amount has not included such specificity or detail in the cost estimate. Providing estimated costs of such incidental reclamation activities like fences, vegetation sampling, mobilization and demobilization costs, silt fencing, riprap, channel construction and other reclamation treatments would appear to only add a small percentage to the total bond estimate. For the purposes of these analyses, costs for such treatments are not detailed in the surety amount estimate. However, once a concise reclamation plan is developed, a more detailed



reclamation costs estimate would be accomplished, reflecting those treatments.

Reclamation of the pads would include a reduction of the outslopes of the pads, from the angle of repose of the material, to a slope of approximately 3:1 as recommended by the Division and as indicated in the plan. Grading of the waste dump slopes will also be required under the same assumptions. Consequently, the extent of the dumps and heaps will increase during regrading. Areas projected in the cost estimation allow for the increase in the acreages for the dumps and heaps. Covering and regrading the heaps may also necessitate extending the liners to isolate the ore. Dozer-assisted scrapers were used in the cost estimate because of the average haul distances and the tonnages involved in the cost estimates. This equipment was used only to simplify the earthmoving cost estimation. More likely, a detailed reclamation plan would require a combination of dozer, scraper, loader, and truck type equipment to accomplish reclamation.

The total permit area is based on the area enclosed within the fence shown on the drawings made by Olympus Aerial Surveys in 1987 and was measured as 344 acres. The total current disturbed area for the operations is estimated at 250 acres based on the aerial photographs of the site and projecting those areas onto the drawings. This 250 acres does include some areas within the disturbed area boundary which are currently undisturbed, but much of this area will be disturbed as part of the reclamation operations. These undisturbed in-holdings within the disturbed area boundary will need to be used as source materials for suitable cover and soils materials for reclamation of the pads and dumps.

In addition to the area indicated as the currently disturbed area, additional areas will most likely need to be disturbed as a source for borrow materials for soil and cover materials. While many of the undisturbed areas along the perimeter of the site are too steep and unsuitable for borrow material, the area located in the northwest corner of the site appears suitable. The extent of this borrow area is estimated as approximately 23 acres. Not all materials necessary for use as cover and soil materials can be derived from this single borrow area. The utilization of other suitable soil and cover material from within the existing disturbed area boundary is essential in accomplishing reclamation.

Determination of the amount and depth of the cover and soils materials required over the heaps and dumps on the site has not been developed in the existing reclamation plan. In order to determine the costs associated with these activities, the following assumptions were made.

Capping of the heaps following detoxification is considered as part of the reclamation requirements. A typical capping scenario would be to provide for six inches of clay over the heap, followed by 1.5 feet of rock or other suitable neutral material, and a final covering of one foot of suitable growth material for revegetation. Because of the arid climate, application of the clay material may not be required for covering the heaps, but because of the porosity of the ore, suitable materials must cover the ore to allow for moisture retention and root penetration. Consequently, the clay and rock cap could be replaced with two feet of suitable neutral material as cover for moisture retention and root penetration, followed by an additional foot of suitable



growth material. In either case, the amount of 'cover' material placed over the ore heaps would be two feet of material. For the bonding purposes, two feet of 'cover' material and an additional one foot of 'soil' (see below) material over the ore heaps will be used in estimating the costs.

Waste dumps, due to the coarse waste rock, have similar problems relating to moisture retention and root penetration. However, in the process of regrading the waste dumps, selected materials within the dumps themselves can be used to allow for finer materials to remain near the dump surfaces. This assumption precludes the necessity for applying two feet of cover material on the waste dumps. One foot of suitable growth material must however be applied to the surfaces of the dumps to satisfactorily achieve revegetation.

Suitable growth materials are to be used in as much as sufficient topsoil materials are not available within the permit area. Selected materials will have to be used from within the site to provide sufficient materials for suitable growth medium. Therefore, suitable growth material shall mean such topsoil, subsoil and other soil materials found within the site which are capable of supporting plant growth. The cost estimate shall refer to this material as 'soil' material.

Revegetation of the site will be accomplished following reclamation standards as presented in the plan and approved by the Division. The cost basis for revegetation will be by application of seed, mulch and fertilizer by hydro or air seeding methods. The total area requiring revegetation varies based on the scenario used. SCENARIO A includes revegetation of the pit areas covered and capped within the pit during backfilling. The total disturbed area requiring revegetation for this alternative including the proposed borrow area is approximately 270 acres, leaving approximately 5 acres un-revegetated. SCENARIO B will not include portions of the pit areas, but would include the borrow area, requiring revegetation of an estimated at 245 acres, leaving approximately 30 acres un-revegetated.

Unit cost information used in the determination of the bond amount is taken from R. S. Means, 1997 Heavy Construction Cost Data, 11<sup>th</sup> Annual Edition. The 30 City Average Cost Index was used in selecting unit cost information for each activity. The Means Historical Cost Index was used to project escalation costs.



Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>AREA AND VOLUMETRIC ESTIMATES USED IN THE BOND CALCULATIONS</b>				
PERMIT AREA (Fence Line)	344	AC		
<b>DISTURBED AREAS</b>				
Plant Area	18.1	AC		
Pit No. 1	25.0	AC		
Pit No. 2	21.2	AC		
WD-1	28.1	AC		
WD-2	14.4	AC		
WD-3	7.2	AC		
WD-4 (Covered by HG-7)	n/a	AC		
WD-5	13.4	AC		
HG-1	14.0	AC		
HG-2	11.7	AC		
HG-3	8.2	AC		
HG-4	6.6	AC		
HG-5	10.9	AC		
HG-6	4.7	AC		
HG-7	10.7	AC		
LG-1	4.3	AC		
LG-2	17.8	AC		
LG-3	10.0	AC		
Roads and Other Areas	23.7	AC		
<b>TOTAL CURRENT DISTURBED AREAS</b>	250.0	AC		
Proposed Borrow Area	23.0	AC		
<b>TOTAL DISTURBED AREAS</b>	273.0	AC		

Determination of Surety Amount				Last Revised	Sep 11, 1997	
Drum Mine			M/023/007	Juab County	Utah	
ACTIVITY		QUANTITY	UNITS	COST/UNIT	AMOUNT	
ESTIMATED HEAP VOLUMES						
Heap	Av. Toe Elev.	Av. Crest Elev.	Av. Height, FT	Toe Area, FT2	Crest Area, FT2	Volume, YD3
HG-1	5945	5980	35	275,068	204,474	311,000
HG-2	5945	5965	20	346,041	227,802	213,000
HG-3	5990	6025	35	196,394	108,526	198,000
HG-4	6000	6035	35	239,006	132,167	241,000
HG-5	5990	6015	25	324,778	176,021	232,000
HG-6	6005	6045	40	101,463	30,624	98,000
HG-7	5960	5985	25	364,434	200,517	262,000
LG-1	5910	5925	15	121,510	70,570	53,000
LG-2	6050	6090	40	303,948	97,983	298,000
LG-3	6035	6085	50	286,581	105,774	363,000
Total Heap Volume						2,269,000
ESTIMATED DUMP VOLUMES						
Waste Dump			Volume, YD3			
WD-1			549,000			
WD-2			434,000			
WD-3			65,000			
WD-4 (Covered by HG-7)			0			
WD-5			789,000			
Total Waste Dump Volumes			1,837,000			



Determination of Surety Amount			Last Revised	Sep 11, 1997	
Drum Mine		M/023/007	Juab County	Utah	
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT	
ESTIMATED PIT CAPACITIES					
The following volumes are the estimated capacities of the closed basin areas of the pits. This is not the entire mined volume of the pits. These volumes were used to determine the amount of materials necessary to allow the pits to drain freely and not create impoundments. These volumes were also used in evaluation of the pits as location for the disposal of leached ore into the pit areas.					
	Elevation, FT	Area, FT2	Interval, FT	Volume, YD3	Cumulative Capacity, YD3
Pit No. 1	5760	340			
	5775	5,847	15	2,000	2,000
	5800	24,365	25	14,000	16,000
	5825	53,791	25	36,000	52,000
	5850	95,472	25	69,000	121,000
	5875	177,321	25	126,000	247,000
	5900	263,750	25	204,000	451,000
	5925	371,950	25	294,000	745,000
	5950	531,097	25	418,000	1,163,000
Pit No. 2	5835	6,313			
	5850	18,470	15	7,000	7,000
	5875	75,619	25	44,000	51,000
	5900	143,652	25	102,000	153,000
	5925	247,721	25	181,000	334,000
	5950	334,497	25	270,000	604,000

Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>SCENARIO A - Relocation of all leached heaps to the pit areas for final reclamation.</b>				
<b>DETOXIFICATION</b> Detoxification assumes flushing of the heap areas with water to neutralize cyanide is not a viable option due the current restrictions on the leach pad operation. In order to eliminate contaminated water perched within and under the leach pad facilities, the ore will be removed down to the pad liners. Any water encountered in the ore removal process will be decanted from heaps, neutralized and disposed of by treatments necessary and approved by DEQ in developing a mitigation plan for detoxification of the leach pads. Costs include evaluation of the heaps, sampling costs, installation of monitoring locations, pumps and other equipment needed, removal of liners, and labor to operate and monitor the detoxification process. Costs associated with removal of the ore are found in the Earthwork section of the estimate.				
DETOXIFICATION	\$150,000	LUMP SUM		\$150,000
<b>SUBTOTAL DETOXIFICATION</b>				<b>\$150,000</b>
<b>EARTHWORK</b> Earthwork includes the costs associated with the relocation of the leached ore to pits for disposal, covering the ore with two feet suitable cover material and one foot of soil material. Waste material and unleached ore is to be covered with one foot of soil material. All areas are to be regraded to maintain fill slopes at 3:1 and to re-establish drainage throughout the permit area.				
<b>HAULING, REGRADING, COVER AND SOIL PLACEMENT</b>				
21 YD3 SCRAPER, MEANS 022 246 2000	\$2.46	/YD3	1500' average haul	
FILL, MEANS 022 262 0010	\$1.40	/YD3	Spread dumped material by dozer, no compaction	
200HP DOZER, MEANS 029 204 2160	\$829.82	/AC	Rough grade and scarify	
<b>PLANT AREA</b>				
Rough Grade and Scarify	18.1	AC	\$829.82	\$15,020
<b>PIT NO. 1</b>				
Total Pit Area	25.0	AC		
Area of pit filled by leached ore	12.5	AC		
Cover (Cap) exposed ore, w/2 feet material using scrapers	40,300	YD3	\$2.46	\$99,138
Soil exposed ore, w/1 foot material using scrapers	20,150	YD3	\$2.46	\$49,569
Rough Grade and Scarify remaining areas	12.5	AC	\$829.82	\$10,373
<b>PIT NO. 2</b>				
Total Pit Area	21.2	AC		
Area of pit filled by leached ore	10.0	AC		
Cover (Cap) exposed ore, w/2 feet material using scrapers	32,300	YD3	\$2.46	\$79,458
Soil exposed ore, w/1 foot material using scrapers	16,100	YD3	\$2.46	\$39,606
Rough Grade and Scarify remaining areas	11.2	AC	\$829.82	\$9,294



Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>WD-1</b>				
Rough Grade and Scarify	28.1	AC	\$829.82	\$23,318
Soil waste dump, w/1 foot material using dozer	45300	YD3	\$1.40	\$63,420
<b>WD-2</b>				
Rough Grade and Scarify	14.4	AC	\$829.82	\$11,949
Soil waste dump, w/1 foot material using dozer	23200	YD3	\$1.40	\$32,480
<b>WD-3</b>				
Rough Grade and Scarify	7.2	AC	\$829.82	\$5,975
Soil waste dump, w/1 foot material using dozer	11600	YD3	\$1.40	\$16,240
<b>WD-4 (Covered by HG-7)</b>				
<b>WD-5</b>				
Rough Grade and Scarify	13.4	AC	\$829.82	\$11,120
Soil waste dump, w/1 foot material using dozer	21600	YD3	\$1.40	\$30,240
<b>HG-1</b>				
Haul leached ore to pit areas using scrapers	311000	YD3	\$2.46	\$765,060
Rough Grade and Scarify	14.0	AC	\$829.82	\$11,617
Soil waste dump, w/1 foot material using dozer	22600	YD3	\$1.40	\$31,640
<b>HG-2</b>				
Haul leached ore to pit areas using scrapers	213000	YD3	\$2.46	\$523,980
Rough Grade and Scarify	11.7	AC	\$829.82	\$9,709
Soil waste dump, w/1 foot material using dozer	18900	YD3	\$1.40	\$26,460
<b>HG-3</b>				
Haul leached ore to pit areas using scrapers	198000	YD3	\$2.46	\$487,080
Rough Grade and Scarify	8.2	AC	\$829.82	\$6,805
Soil waste dump, w/1 foot material using dozer	13,200	YD3	\$1.40	\$18,480
<b>HG-4</b>				
Haul leached ore to pit areas using scrapers	241,000	YD3	\$2.46	\$592,860
Rough Grade and Scarify	6.6	AC	\$829.82	\$5,477
Soil waste dump, w/1 foot material using dozer	10,600	YD3	\$1.40	\$14,840
<b>HG-5</b>				
Haul leached ore to pit areas using scrapers	232,000	YD3	\$2.46	\$570,720

Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
Rough Grade and Scarify	10.9	AC	\$829.82	\$9,045
Soil waste dump, w/1 foot material using dozer	17,600	YD3	\$1.40	\$24,640
<b>HG-6</b>				
Haul leached ore to pit areas using scrapers	98,000	YD3	\$2.46	\$241,080
Rough Grade and Scarify	4.7	AC	\$829.82	\$3,900
Soil waste dump, w/1 foot material using dozer	7,600	YD3	\$1.40	\$10,640
<b>HG-7</b>				
Haul leached ore to pit areas using scrapers	262,000	YD3	\$2.46	\$644,520
Rough Grade and Scarify	10.7	AC	\$829.82	\$8,879
Soil waste dump, w/1 foot material using dozer	17,300	YD3	\$1.40	\$24,220
<b>LG-1</b>				
Rough Grade and Scarify	4.3	AC	\$829.82	\$3,568
Soil waste dump, w/1 foot material using dozer	6,900	YD3	\$1.40	\$9,660
<b>LG-2</b>				
Haul leached ore to pit areas using scrapers	298,000	YD3	\$2.46	\$733,080
Rough Grade and Scarify	17.8	AC	\$829.82	\$14,771
Soil waste dump, w/1 foot material using dozer	28,700	YD3	\$1.40	\$40,180
<b>LG-3</b>				
Haul leached ore to pit areas using scrapers	363,000	YD3	\$2.46	\$892,980
Rough Grade and Scarify	10.0	AC	\$829.82	\$8,298
Soil waste dump, w/1 foot material using dozer	16,100	YD3	\$1.40	\$22,540
<b>ROADS AND OTHER AREAS</b>				
Rough Grade and Scarify	23.7	AC	\$829.82	\$19,667
<b>PROPOSED BORROW AREA</b>				
Rough Grade and Scarify	23.0	AC	\$829.82	\$19,086
<b>SUBTOTAL EARTHWORK</b>				<b>\$6,292,682</b>
<b>DEMOLITION AND REMOVAL</b>				
Demolition and removal of Plant Area structures, pumps, piping, etc. Disposal of demolition debris, trash, pond and heap liners, and other waste materials to an approved landfill. Salvage value of equipment or materials is not considered as part of the bond amount required.				
DEMOLITION AND REMOVAL	\$30,000	LUMP SUM		\$30,000
<b>SUBTOTAL DEMOLITION AND REMOVAL</b>				<b>\$30,000</b>



Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>REVEGETATION</b>				
Seed/Fertilize MEANS 029 308 5700	\$577.17	AC		
Fertilizer and Seed	270	AC	\$577.17	\$155,836
<b>SUBTOTAL REVEGETATION</b>				<b>\$155,836</b>
<b>CONSTRUCTION SUPERVISION</b>				
Foreman, Outside MEANS Skwk	\$45.45	/HR		
80 weeks supervision @ 40 hours/week	3,200	HRS	\$45.45	\$145,440
<b>SUBTOTAL CONSTRUCTION SUPERVISION</b>				<b>\$145,440</b>
<b>SUBTOTAL</b>				<b>\$6,773,958</b>
<b>ENGINEERING AND CONTINGENCY, @ 10%</b>				<b>\$677,400</b>
<b>SUBTOTAL</b>				<b>\$7,451,358</b>
<b>ESCALATION, @ 2.52% PER YEAR, FOR FOUR YEARS (2002\$)</b>				<b>\$780,000</b>
<b>TOTAL BOND AMOUNT, SCENARIO A (ROUNDED TO THE NEAREST \$1,000)</b>				<b>\$8,231,000</b>

Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>SCENARIO B - Regrading and capping of all leached heaps in existing locations.</b>				
<b>DETOXIFICATION</b> Detoxification assumes flushing of the heap areas with water to neutralize cyanide is not a viable option due the current restrictions on the leach pad operation. In order to eliminate contaminated water perched within and under the leach pad facilities, the ore will be drilled or trenched down to the pad liners to locate perched water. Any water encountered in the process will be decanted from heaps or otherwise neutralized or disposed of by treatments necessary and approved by DEQ in developing a mitigation plan for detoxification of the leach pads. Costs include evaluation of the heaps, drilling/trenching, sampling costs, installation of monitoring locations, extending pad liners, pumps and other equipment needed, and labor to operate and monitor the detoxification process.				
DETOXIFICATION	\$350,000	LUMP SUM		\$350,000
<b>SUBTOTAL DETOXIFICATION</b>				<b>\$350,000</b>
<b>EARTHWORK</b> Earthwork includes the costs associated with the regrading of the leached ore heaps, covering the ore with two feet suitable cover material and one foot of soil material. Waste material and unleached ore is to be regraded and covered with one foot of soil material. All areas are to be regraded to maintain fill slopes at 3:1 and to re-establish drainage throughout the permit area.				
<b>HAULING, REGRADING, COVER AND SOIL PLACEMENT</b>				
21 YD3 SCRAPER, MEANS 022 246 2000	\$2.46	/YD3	1500 ft average haul	
FILL, MEANS 022 262 0010	\$1.40	/YD3	Spread dumped material by dozer, no compaction	
200HP DOZER, MEANS 029 204 2160	\$829.82	/AC	Rough grade and scarify	
<b>Plant Area</b>				
Rough Grade and Scarify	18.1	AC	\$829.82	\$15,020
<b>Pit No. 1</b>				
Total Pit Area	25.0	AC		
Area of pit filled by leached ore	12.5	AC		
Cover (Cap) exposed ore, w/2 feet material using scrapers	40,300	YD3	\$2.46	\$99,138
Soil exposed ore, w/1 foot material using scrapers	20,150	YD3	\$2.46	\$49,569
Rough Grade and Scarify remaining areas	12.5	AC	\$829.82	\$10,373
<b>Pit No. 2</b>				
Total Pit Area	21.2	AC		
Area of pit filled by leached ore	8.0	AC		
Cover (Cap) exposed ore, w/2 feet material using scrapers	25,800	YD3	\$2.46	\$63,468
Soil exposed ore, w/1 foot material using scrapers	12,900	YD3	\$2.46	\$31,734
Rough Grade and Scarify remaining areas	13.2	AC	\$829.82	\$10,954



Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>WD-1</b>				
Rough Grade and Scarify	28.1	AC	\$829.82	\$23,318
Soil waste dump, w/1 foot material using dozer	45,300	YD3	\$1.40	\$63,420
<b>WD-2</b>				
Rough Grade and Scarify	14.4	AC	\$829.82	\$11,949
Soil waste dump, w/1 foot material using dozer	23,200	YD3	\$1.40	\$32,480
<b>WD-3</b>				
Rough Grade and Scarify	7.2	AC	\$829.82	\$5,975
Soil waste dump, w/1 foot material using dozer	11,600	YD3	\$1.40	\$16,240
<b>WD-4 (Covered by HG-7)</b>				
<b>WD-5</b>				
Rough Grade and Scarify	13.4	AC	\$829.82	\$11,120
Soil waste dump, w/1 foot material using dozer	21,600	YD3	\$1.40	\$30,240
<b>HG-1</b>				
Rough Grade and Scarify	14.0	AC	\$829.82	\$11,617
Cover (Cap) Heap w/2 feet using scrapers	45,200	YD3	\$2.46	\$111,192
Soil waste dump, w/1 foot material using dozer	22,600	YD3	\$1.40	\$31,640
<b>HG-2</b>				
Rough Grade and Scarify	11.7	AC	\$829.82	\$9,709
Cover (Cap) Heap w/2 feet using scrapers	37,800	YD3	\$2.46	\$92,988
Soil waste dump, w/1 foot material using dozer	18,900	YD3	\$1.40	\$26,460
<b>HG-3</b>				
Rough Grade and Scarify	8.2	AC	\$829.82	\$6,805
Cover (Cap) Heap w/2 feet using scrapers	26,500	YD3	\$2.46	\$65,190
Soil waste dump, w/1 foot material using dozer	13,200	YD3	\$1.40	\$18,480
<b>HG-4</b>				
Rough Grade and Scarify	6.6	AC	\$829.82	\$5,477
Cover (Cap) Heap w/2 feet using scrapers	21,300	YD3	\$2.46	\$52,398
Soil waste dump, w/1 foot material using dozer	10,600	YD3	\$1.40	\$14,840
<b>HG-5</b>				
Rough Grade and Scarify	10.9	AC	\$829.82	\$9,045

Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
Cover (Cap) Heap w/2 feet using scrapers	35,200	YD3	\$2.46	\$86,592
Soil waste dump, w/1 foot material using dozer	17,600	YD3	\$1.40	\$24,640
<b>HG-6</b>				
Rough Grade and Scarify	4.7	AC	\$829.82	\$3,900
Cover (Cap) Heap w/2 feet using scrapers	15,200	YD3	\$2.46	\$37,392
Soil waste dump, w/1 foot material using dozer	7,600	YD3	\$1.40	\$10,640
<b>HG-7</b>				
Rough Grade and Scarify	10.7	AC	\$829.82	\$8,879
Cover (Cap) Heap w/2 feet using scrapers	34,500	YD3	\$2.46	\$84,870
Soil waste dump, w/1 foot material using dozer	17,300	YD3	\$1.40	\$24,220
<b>LG-1</b>				
Rough Grade and Scarify	4.3	AC	\$829.82	\$3,568
Soil waste dump, w/1 foot material using dozer	6,900	YD3	\$1.40	\$9,660
<b>LG-2</b>				
Rough Grade and Scarify	17.8	AC	\$829.82	\$14,771
Cover (Cap) Heap w/2 feet using scrapers	57,400	YD3	\$2.46	\$141,204
Soil waste dump, w/1 foot material using dozer	28,700	YD3	\$1.40	\$40,180
<b>LG-3</b>				
Rough Grade and Scarify	10.0	AC	\$829.82	\$8,298
Cover (Cap) Heap w/2 feet using scrapers	32,300	YD3	\$2.46	\$79,458
Soil waste dump, w/1 foot material using dozer	16,100	YD3	\$1.40	\$22,540
<b>Roads and Other Areas</b>				
Rough Grade and Scarify	23.7	AC	\$829.82	\$19,667
<b>Proposed Borrow Area</b>				
Rough Grade and Scarify	23.0	AC	\$829.82	\$19,086
<b>SUBTOTAL EARTHWORK</b>				<b>\$1,570,404</b>
<b>DEMOLITION AND REMOVAL</b>				
Demolition and removal of Plant Area structures, pumps, piping, etc. Disposal of demolition debris, pond and pad liners, trash and other waste materials to an approved landfill. Salvage value of equipment or materials is not considered as part of the bond amount required.				
DEMOLITION AND REMOVAL	\$30,000	LUMP SUM		\$30,000
<b>SUBTOTAL DEMOLITION AND REMOVAL</b>				<b>\$30,000</b>



Determination of Surety Amount			Last Revised	Sep 11, 1997
Drum Mine		M/023/007	Juab County	Utah
ACTIVITY	QUANTITY	UNITS	COST/UNIT	AMOUNT
<b>REVEGETATION</b>				
Seed/Fertilize MEANS 029 308 5700	\$577.17	AC		
Fertilizer and Seed	245	AC	\$577.17	\$141,407
<b>SUBTOTAL REVEGETATION</b>				<b>\$141,407</b>
<b>CONSTRUCTION SUPERVISION</b>				
Foreman, Outside MEANS Skwk	\$45.45	/HR		
60 weeks supervision @ 40 hours/week	2,400	HRS	\$45.45	\$109,080
<b>SUBTOTAL CONSTRUCTION SUPERVISION</b>				<b>\$109,080</b>
<b>SUBTOTAL</b>				<b>\$2,200,891</b>
<b>ENGINEERING AND CONTINGENCY, @ 10%</b>				<b>\$220,100</b>
<b>SUBTOTAL</b>				<b>\$2,420,991</b>
<b>ESCALATION, @ 2.52% PER YEAR, FOR FOUR YEARS (2002\$)</b>				<b>\$253,400</b>
<b>TOTAL BOND AMOUNT, SCENARIO B (ROUNDED TO THE NEAREST \$1,000)</b>				<b>\$2,674,000</b>

The bond amount determined in SCENARIO B is recommended in as much as both scenarios rely on assumptions regarding the disposition of the heaps which cannot be resolved until such time as analysis and evaluation of the existing heaps occur. A reclamation plan must be submitted to the Division which reflects reclamation treatments based on the above that can successfully demonstrate that reclamation can be accomplished. Once a revised plan is submitted and approved, the bond amount required can be adjusted as necessary to reflect such changes.

#### Determination of Bond Liability for Each Operator

Reclamation treatments and costs were applied for the entire site in the above cost scenarios and were not segregated between the two operators. In order to determine the bond liability for each operator, several considerations were evaluated. First, would be to increase the bond on a pro-rata share based on the bond amount at the time of partial permit transfer. This alternative however, because those costs were based on conditions which currently do not exist, appears arbitrary.

Since the acreages used in the above estimation also vary from those indicated in the



partial permit transfer document, adjusting the bond in proportion to the acreages in the partial permit transfer also appears inappropriate.

Utilizing the intent of the partial permit transfer in that JUMBO was indicated as being responsible for heaps HG-1, HG-2, HG-3 HG-4, and HG-5, while WSMC would retain liability for heaps HG-6, LG-1, LG-2, and LG-3. The area of the toe for each heap was calculated and is shown in the estimated heap volume calculations in the above table. Based on these areas, JUMBO accounts for 31.7 acres in heap area and WSMC accounts for 27.1 acres in heap area as they currently exists on the site. In terms of volume, JUMBO's heaps contained an estimated 1,195,000 cubic yards of ore and WSMC's heaps contained an estimated 1,074,000 cubic yards.

JUMBO's intended responsibility for the other areas included Pit 1, Pit 2, the Plant Area, Roads and other miscellaneous disturbed areas. WSMC's responsibility included the waste dumps, WD-1, WD-2, WD-3 and WD-5. For these areas as delineated during this evaluation, JUMBO accounts for about 88 acres and WSMC accounts for 63.1 acres. Neither plan discusses the possibility of the borrow area that was incorporated into the site which had an estimated additional 23 acres. Utilization of the borrow area, the roads, ramps, waste dumps and other inholdings within the delineated disturbed areas are commingled during reclamation evaluating based on these areas seems inappropriate at this time.

Because much of the controversy and costs incorporated into the cost estimate involve detoxification, regrading and reclamation of the heaps, and, that the amount of ore retained in the heaps for each operator is essentially equal, it follows that, until such time as the plans are revised, that both operators should assume equal responsibility in terms of the bond amount required.

Accordingly, the Division finds that each operator should increase their respective bond amount \$1, 337,000.00 and that the aggregate amount of bond for the entire site is \$2,674,000.00.





Norman H. Bangerter  
Governor  
Suzanne Dandoy, M.D., M.P.H.  
Executive Director  
Kenneth L. Alkema  
Director

DEPARTMENT OF HEALTH  
DIVISION OF ENVIRONMENTAL HEALTH

288 North 1460 West  
P.O. Box 16690  
Salt Lake City, Utah 84116-0690  
(801) 538-6121

December 14, 1988

Mr. Ed King  
Jumbo Mining Co.  
6305 Fern Spring Cove  
Austin, Texas 78730

DOGM  
MINERALS PROGRAM  
FILE COPY

YOUR COPY

RECEIVED  
MAR 10 1989

DIVISION OF  
OIL, GAS & MINING

Re: Jumbo Mine (formerly Drum Mine)  
Project Statement

Dear Mr. King:

We have reviewed your proposal dated 21 October 1988 concerning future operations at the Drum mine which your company has recently purchased. Many of our concerns are related to protecting our ground water resources.

The three (3) heap leach pads defined in our 4 October 1983 construction permit may be leached (per our 23 September 1988 order) until 1 October 1990. Ore shall not be placed any higher than forty (40) feet as stated in our 21 July 1988 letter.

The thirteen (13) acre heap leach pad defined in our 16 March 1984 construction permit may be leached (per our 23 September 1988 order) until 1 October 1990. Ore shall not be placed any higher than forty (40) feet as stated in our 21 July 1988 letter.

The Bureau of Water Pollution Control (the Bureau) will not consider requests to extend the operating life of these facilities beyond 1 October 1990. This is because of the temporary nature of heap leach construction and because the Bureau is developing regulations for heap leach operations which require more protection for surface and ground water than these facilities provide.

Based on the information presented in your 21 October 1988 letter, it seems reasonable that authorized heap leach pad #4 and unauthorized heap leach pad #5 as defined in our 23 September 1988 order are in fact the fourth permitted heap leach pad as described in our 16 March 1984 construction permit. This conclusion is based on the following:

1. The size of the heap leach pad described in the 16 March 1984 construction permit and the combined size of pads #4 and #5 are approximately the same i.e. 13 acres.
2. Heap leach pads #4 and #5 are in fact not two separate pads but are constructed as one.
3. As best can be established, the pads were constructed at the same time.

Mr. Ed King  
Page Two

4. Jumbo's presentation that the size of heap leach pads #4 and #5 was larger than the hydraulic capacity of the process solution system could supply. Therefore for operational considerations the pad permitted in our 16 March 1984 construction permit is in fact pad #4 and #5 as referred to in our 23 September 1988 order.

Your letter of October 21, 1988 also requested permission to mine and load new ore on the approved heap leach pads. This will be allowed as a modification to our order to Western States Minerals of 23 September 1988.

The following shall be submitted for review and approval prior to removing any ore from the existing heap leach pads or commencing leaching operations:

1. Each pad shall be evaluated to establish the thickness of ore which shall remain to be a protective cover for the liner if you wish to treat, crush or restack the ore. The acceptable thickness shall be at least two feet but no less than twice the maximum ore particle size..
2. The concept of positive depth restraints on the bulldozer ripper tooth shall be explained.
3. The process by which spent ore will be recrushed, exposed to cyanide etc. without contamination to surface or ground water, shall be submitted for review.
4. Provisions which will prevent spillage of cyanide or cyanide laden ore being transported shall be submitted for review.
5. All unauthorized pads shall be dealt with as described in our 23 September 1988 order.
6. Continued leaching of authorized pads #1, #2, #3, #4 and #5 (based on the previous presentation) will be allowed only until 1 October 1990 as stated in our 23 September 1988 order.
7. The quality of the PVC liner shall be evaluated in detail with documentation to determine its present condition and on an annual basis thereafter throughout the remainder of the project. This evaluation shall be reported in writing to the Bureau of Water Pollution Control by 1 May of each year.
8. The neutralization criteria for the heap leach pads and process ponds shall be reviewed and approved by the Bureau.
9. If the ore already on the pads will be leached with chemicals other than cyanide, a new plan must be submitted for review.
10. Existing ore and new ore may be loaded onto any authorized pad to a maximum height of 40-feet. This limitation will not require Jumbo Mining to reduce the height of ore stacked in excess of 40-feet by Western States Minerals to within this limit.



Mr. Ed King  
Page Three

Please call Mack Croft or Charlie Dietz if there are any questions.

Sincerely,

Utah Water Pollution Control Committee

Don A. Ostler, P.E.  
Executive Secretary

cc: Roger Foisy, Central Utah District Health Department, Richfield  
Bruce Hall, Central Utah District Health Department, Nephi

CGD/ag  
4076y-15

M/027/007



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

### HOUSE RANGE RESOURCE AREA

15 East 500 North

P.O. Box 778

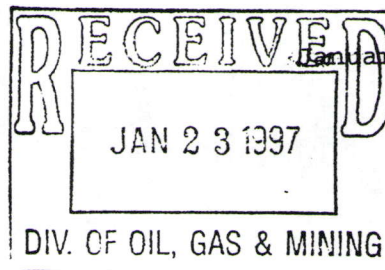
Fillmore, Utah 84631

TAK  
H

IN REPLY  
3800  
(U-054)  
UTU-072862

CERTIFIED MAIL #Z 138 791 114  
RETURN RECEIPT REQUESTED

ALAN R CERNY  
WESTERN STATES MINERALS CORPORATION  
4975 VAN GORDON ST  
WHEATRIDGE CO 80033



January 17, 1997

Dear Mr. Cerny:

On July 8, 1983 this office received from Western States Minerals Corporation (WSMC) a Plan of Operations (POO) for the Drum Mine. The POO was approved on August 18, 1983. On January 30, 1984, we received an amendment to the POO, which revised the location of the waste dump indicated on the attached map. This amendment was approved on February 2, 1984. On April 13, 1984, we received a second amendment, this one proposing exploration roads and drill sites. This was approved on May 4, 1984. On December 9, 1988, we received from Jumbo Mining Company a letter which stated it was "currently working within the guidelines of the Plan of Operation submitted by Western States". We never formally concurred with the change of operators; however, our subsequent actions indicate that we have since that time considered Jumbo to have assumed the responsibility for the operations and liabilities of the POO. Jumbo has also indicated to us directly that it wishes to assume responsibility for two additional heaps that were never part of the POO and, accordingly, we are not asking WSMC to reclaim them.

There are, however, several disturbances within the Drum Mine project that were never part of the approved POO and associated amendments mentioned above. Most of these disturbances were apparently created by WSMC without authorization and, as such, we consider the company to be liable for any and all costs of restoring any natural resources damaged by the unpermitted activities and for clean-up and reclamation of the disturbances. Most of the disturbances are indicated on the map labeled Attachment 1 and include:

Lo-Grade Heaps #'s 1, 2, and 3 (2.1, 2.9, and 3.4 acres, respectively)  
Hi-Grade Heaps #'s 6 and 7 (1.5 and 5.3 acres, respectively)  
One 3.6 acre waste dump  
One 5.2 acre waste dump

This is a total of 24 acres of unauthorized disturbance. WSMC appears to be in violation of the following regulations:

- 43 CFR 3809.3-2 Failure to file a Plan of Operations.
- 43 CFR 3809.1-9(b) Failure to post reclamation bond after approval of a Plan of Operations.
- 43 CFR 3809.2-2(b) Failure to comply with applicable Federal and State water quality standards.
- 43 CFR 3809.3-7 Failure to obtain permission to not reclaim during extended periods of non-operation.



Please submit a Plan of Operations for reclamation of the above-mentioned disturbances. This POO should include the following:

Since the integrity of the pad liners and collection systems is not acceptable, the heaps cannot be rinsed. Therefore, a reclamation plan for placing impermeable caps over the heaps must be submitted. The proposed starting date for beginning this reclamation must be within 120 days of receipt of this letter. If, by the end of the 120 day period, the State of Utah, Division of Water Quality (DWQ) has determined that the heaps are not discharging contaminants to groundwater, the heaps may be reclaimed as though they had been rinsed, and an alternative reclamation proposal should be submitted for this contingency. Since it is possible that DWQ will not be able to determine the status of the heaps through its sampling, you may want to propose to them your own sampling plan.

A reclamation plan for the two waste dumps.

A source of topsoil for reclamation of the waste dumps and pads.

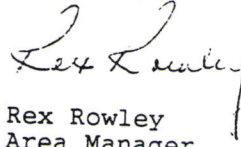
On January 3, 1997, an inspection was conducted at Busby Spring, northeast of the mine site. Within the immediate vicinity of the spring are several disturbances which we were told were created by WSMC. We have no record in our files of you proposing any drilling or development of this area. The most notable of the disturbances is a drill hole just above the spring on the hill. This hole is unplugged, and is filled with water. This is a threat to groundwater in the area, and also may have altered the flow of the spring itself. The State of Utah, Division of Oil, Gas and Mining (UDOGM) requires that 50 foot plugs be inserted on either side of any aquifer encountered by exploratory drilling. This hole must be plugged within 90 days of receipt of this letter. WSMC also built a pond below the spring and built a pipe structure with which to fill water trucks. The reclamation of both these disturbances must be addressed in the reclamation plan.

Also, attached to this letter is a notice of intent (NOI) submitted by WSMC on December 19, 1983 (Attachment 2). This NOI was neither date stamped nor apparently accepted by this office. Since it is outside the project boundary of the Drum Mine and was never approved as an amendment, we are not considering it part of the original POO and we consider WSMC liable for the reclamation of any disturbance associated with it. A careful inspection of this site has never been conducted; however, we received a subsequent NOI (Attachment 3) on August 24, 1987, which appears to refer to the disturbance created under the 1983 notice, and preliminary inspections indicate that some disturbance was associated with this notice. The reclamation plan should include the rehabilitation of these disturbances. We intend to inspect them more closely within 30 days, and if necessary will be able to specify to you our requirements.

WSMC submitted an NOI in 1985 that was not serialized, and an additional two NOIs submitted in 1987 that were serialized UT-057-39N and UT-056-64N. All these NOIs proposed exploration on the Mizpah claims, upon which Jumbo has since submitted a Plan of Operations to Mine. The Plan has not yet been approved by UDOGM, and no mining has taken place. We have given Jumbo a deadline by which to submit a reclamation bond for the exploration work. If they fail to meet this deadline, the site must immediately be reclaimed by WSMC. Your reclamation plan should include the rehabilitation of the disturbances associated with your exploration notices. If Jumbo does submit a bond by its deadline, which will fall before April 30, 1997, your plan can be modified to exclude reclamation of the disturbances at the Mizpah site.

Within 45 days of receipt of this letter, please submit a Plan of Operations, containing a reclamation plan for these disturbances, so a notice of noncompliance does not have to be issued. Within 30 days after submitting the POO, you must also provide a realistic reclamation cost estimate for the most costly reclamation alternative. If that estimate exceeds the amount of bond currently held jointly by the BLM and UDOGM, the amount of the shortfall will need to be posted at that time. The amount of the bond can be adjusted after it is determined whether or not the heaps are contaminated, the agencies have completed their own cost estimate, and if Jumbo assumes any additional reclamation liability. You need to be aware that failure to submit the bond can also result in the issuance of a notice of noncompliance. Please contact Ron Teseneer at (801)743-6811, if you have any questions.

Sincerely,

  
Rex Rowley  
Area Manager

Enclosures

1. Map of Mine Site
2. 2 Notices of Intent

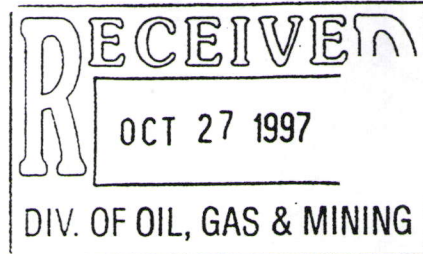
cc: D. Wayne Hedberg, State of Utah, Division of Oil, Gas and Mining

E B King, Jumbo Mining Company, 6305 Fern Spring Cove, Austin, TX 78730

Mark Novak, State of Utah, Department of Environmental Quality Division of Water Quality

Darrell Willden, PO Box 336, Delta, UT 84624





3800  
(U-054)  
UTU-063447-01

January 15, 1997

CERTIFIED MAIL #Z 138 791 113

E B KING  
PRESIDENT  
JUMBO MINING COMPANY  
6305 FERN SPRING COVE  
AUSTIN TX 78730

Dear Mr. King:

We received your amended Plan of Operations (POO) for the Drum Mine on September 17, 1996. There are several deficiencies in the amendment which must be addressed before we can approve the amendment.

First, we would like to call your attention to a letter received by this office on December 9, 1988 (copy attached). This letter stated:

"We are currently operating under the guidelines of the Plan of Operations submitted by Western States and request your concurrence in this matter."

Our case file indicates that no formal concurrence was ever given; but, within the next few months, representatives from this office met on site with you and your staff. We feel this indicated concurrence.

We believe the key phrase of that letter is:

"We are currently operating under the guidelines of the Plan of Operations submitted by Western States..."

Our contention is that, with this letter, your company assumed reclamation responsibility for all the disturbances created by Western States under its 1983 POO, and their two 1984 amendments to move a waste dump to an alternate location, and to build some exploration roads and prospects south and west of the mine site. However, we do not feel that this letter obligates Jumbo to reclaim any disturbances that were not approved by the BLM and for which Jumbo has never indicated to the BLM any assumption of responsibility. These disturbances are indicated on the attached map, and include:

Lo-Grade Heaps #'s 1, 2, and 3  
Hi-Grade Heaps #'s 6 and 7  
The 3.6 and the 5.2 acre waste dumps

In the 1996 reclamation plan, you stated that Jumbo will assume reclamation responsibility for heaps four and five. Based on our

**FILE COPY**



records, we also hold Jumbo responsible for the 10.6 acre waste dump, that was approved under the January 30, 1984 amendment. The reclamation plan should include reclamation of this waste dump.

The other 1984 amendment (attached) brought into the plan three new areas, one of which is referred to as area "B" in the amendment. We know Area B contains two sets of roads, trenches and drill sites, one set in the SW $\frac{1}{4}$  of Section 18, T. 15 S., R. 10 W., and one set in the E $\frac{1}{2}$  of Section 13, T. 15 S., R. 11 W. Reclamation of these disturbances should be included in the reclamation plan. Areas "A" and "C" were recently inspected, and no surface disturbance related to this plan was found.

The exploration of the Mizpah site was conducted by Western States under three Notices of Intent. Jumbo has since submitted to us a POO to mine the site. The POO was approved by the BLM, but not by the Utah Division of Oil, Gas and Mining (UDOGM), and there has been no activity at the site since you acquired the claims. However, the road to the site was built by Jumbo in 1989. The original purpose of this road was to haul ore from the Alto mine, which is on private land. Since you never assumed reclamation liability for the exploration activities at the Mizpah site, we will require Western States to begin reclamation at this site within 90 days of receipt of this letter, unless by that date you have submitted an additional bond to cover the costs of both the reclamation of the existing exploration disturbances and the Alto haul road. If you do not submit the bond, we will require that you either immediately begin reclamation of the road, or apply for a right of way.

The revised POO should also include the reclamation of the cuts and drill sites in the N/2 of Section 7, T., 15 S., R. 10 W., that were created under Jumbo's July 15, 1987 Notice of Intent. This site has yet to be thoroughly inspected, but will be within 30 days.

There are a number of unplugged drill holes around the mine site. Please provide a map of those which you are aware of within the fenced area, and include in the revised POO justification for leaving them open, and a time frame for their closure. Any others must be plugged immediately.

We are in receipt of the December 6, 1996 copy of the letter the Utah Division of Water Quality (DWQ) sent to you. DWQ has not yet accepted the leach pads as decontaminated and therefore your reclamation proposal for them is deficient. The regulations 43 CFR 3809.2-2(b) state:

"All operators shall comply with applicable Federal and State water quality standards..."

Until DWQ is satisfied that the heaps are not contaminating groundwater, the reclamation plan must address the placement of impermeable caps over them, or moving the heaps onto a new pad within a reasonable length of time. We will allow three months from the date of receipt of this letter to complete the permitting for the new pad, as proposed in your December 5, 1995 letter to DWQ, and another six months for its construction and moving the old heaps on to it.



Capping of the heaps must begin within 120 days of receipt of this letter, unless DWQ has by then determined that the heaps are decontaminated.

It is imperative that Jumbo cooperate fully with DWQ to determine whether the heaps are decontaminated. We strongly suggest that you propose to them alternative sampling programs that could determine the state of the heaps, should sampling the effluent, as proposed in their December 6, 1996 letter, be determined not feasible.

If, within 120 days of receipt of this letter, DWQ has determined that the heaps are indeed decontaminated but the new leach pad has not been permitted, we will require the commencement of reclamation of the heaps as you proposed in the September 17, 1996 revised reclamation plan. If you wish to delay reclamation because you believe there are still recoverable values in the heaps, you must provide evidence of mineralization. A report should be submitted to this office with the cost breakdown of reprocessing the ore, and the value of the minerals that could be extracted. Preferably, the heaps should be sampled and evaluated to determine the amount of extractable minerals remaining within them, rather than relying on Western State's records of the quality of the ore as placed on the heaps, versus the amount of minerals eventually recovered. A sampling program to evaluate the mineralization of the heaps could be broadened to include an evaluation of contamination, and would be useful if, as stated above, sampling the effluent fails to be productive.

If and when the permits for the new leach pad are obtained, you must immediately apply for a new right-of-way (ROW) for the water pipeline. Also, a recent inspection has revealed that there is an unauthorized communication site near the southeast section corner of Section 7, T. 15 S., R. 10 W. A ROW for this site needs to be obtained immediately. Please contact Nancy DeMille of this office to resolve this trespass, and to establish procedures and deadlines for either obtaining the ROW's or reclaiming the sites.

As stated in our regulations, 43 CFR 3809.3-7:

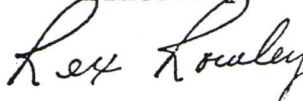
"...All operators may be required, after an extended period of non-operation for other than seasonal operations, to remove all structures, equipment and other facilities and reclaim the site of operation, unless he/she receives permission, in writing from the authorized officer to do otherwise."

The Drum Mine has been in shut-down status for approximately six years, and no such permission has ever been granted, nor can it be, until all disturbances are either adequately bonded or reclaimed. We will allow another 45 days from receipt of this letter for you to submit to us a reclamation plan. All proposals within the plan must fall within guidelines established by the BLM, DWQ, and UDOGM. Within 30 days of submitting the plan, you must also provide a realistic reclamation cost estimate for the most costly reclamation alternative for all existing facilities and disturbances for which you are liable. If that estimate exceeds the amount of bond currently held jointly by the BLM and UDOGM, you must post the amount of the shortfall at that

time. The bond amount will be adjusted after it is determined whether or not the heaps are contaminated, the agencies have completed their own cost estimates, and any further permitting is completed. If the plan and the additional bond monies are not in place by these deadlines, then you will have established a record of noncompliance for failing to comply with the notice of noncompliance dated March 10 1995, and we will require reclamation to begin immediately. Reclamation of the Alto haul road, water pipeline, well facilities, and communications facility will also be required at that time.

If you have any questions, please contact Ron Teseneer at (801) 743-6811.

Sincerely,



Rex Rowley  
Area Manager

Enclosures

1. Letter from Jumbo to BLM
2. Map of Mine Site
3. Amendment to POO

cc: Western States Minerals, 4975 Van Gordon St., Wheat Ridge,  
CO, 80033

D. Wayne Hedberg, State of Utah, Division of Oil, Gas and  
Mining

Mark Novak, State of Utah, Department of Environmental  
Quality Division of Water Quality

Darrell Willden, PO Box 336, Delta, UT 84624

Frank Law, PO Box 252, Delta, UT 84624

bcc: Terry McParland (UT-921)  
Michael Jackson (UT-050)

SWysong:ap





# State of Utah

## DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER QUALITY

Michael O. Leavitt  
Governor

Dianne R. Nielson, Ph.D.  
Executive Director

Don A. Ostler, P.E.  
Director

288 North 1460 West  
P.O. Box 144870  
Salt Lake City, Utah 84114-4870  
(801) 538-6146 Voice  
(801) 538-6016 Fax  
(801) 536-4414 T.D.D.

m/027/007

Water Quality Board  
Leroy H. Wullstein, Ph.D.  
Chairman

Lynn F. Pett  
Vice Chairman

Robert G. Adams  
R. Rex Ausburn, P.E.

Nan Bunker

Leonard Ferguson

Dianne R. Nielson, Ph.D.

K.C. Shaw, P.E.

Ronald C. Sims, Ph.D.

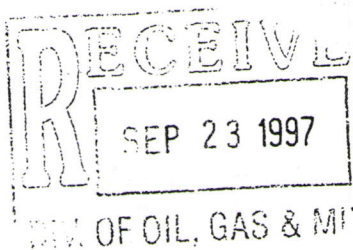
J. Ann Wechsler

William R. Williams

Don A. Ostler, P.E.  
Executive Secretary

September 10, 1997

Mr. Ed King  
Jumbo Mining Co.  
6305 Fern Spring Cove  
Austin, TX 78730



Dear Mr. King:

Subject: Ground Water Discharge Permit Application for the Drum Mine

We have reviewed your response to our letter of July 18, 1997, which we received by fax on September 2, 1997. The ground water discharge permit, when issued, will include requirements for both planned and past operations. The compliance schedule for the permit will require immediate actions to address environmental problems at the Drum Mine site associated with facilities for which you are responsible. In particular, the old leach pads for which Jumbo Mining is responsible must be closed in such a way that there will be no significant long term discharge of contaminants to the subsurface. A cap over the leach pads to minimize infiltration will be required unless you can demonstrate that a less-protective design is justified. To date you have failed to propose an acceptable plan for development of adequate information upon which this demonstration can be made.

Because we anticipate this permit will require significant staff time to review plans for reclamation and related studies, we believe that the costs we will incur will not be compensated by the standard permit fee. Therefore, we will assess fees for this project based on time needed for staff review, at a rate of \$60 per hour. You will be billed periodically for staff time spent on this project. The time for which you will be billed for will begin to accrue from the date of this letter and includes all time spent reviewing and drafting correspondence, technical reports, meetings and the actual writing of the permit.

Upon your concurrence with the above, we will begin preparing a draft permit based on the information we have on hand at this time. In order to facilitate the issuance of this permit please respond to this letter within 30 days of your receipt of this letter. If you would like to discuss any issues involved in developing this permit please contact Mark Novak of this office.

Sincerely,

Don A. Ostler, P.E.  
Director

DAO:mtm/fb

cc: Wayne Hedberg, DOGM  
Ron Teseneer, BLM Fillmore Office  
Roger Foisy, District Engineer  
Central Utah Health Dept.  
Tom Mitchell, Attorney General

K:\WQ\PERMITS\FREDERICK\JUMBO\PARS.LTR  
FILE:JUMBO MINING, DRUM MINE





This page is a reference page used to track documents internally for the Division of Oil, Gas and Mining

Mine Permit Number M0270007 Mine Name Drum Mine  
Operator Western States Minerals Date 11-6-1997  
TO \_\_\_\_\_ FROM \_\_\_\_\_

☐ CONFIDENTIAL ☐ BOND CLOSURE ☐ LARGE MAPS ☒ EXPANDABLE  
☐ MULTIPUL DOCUMENT TRACKING SHEET ☐ NEW APPROVED NOI  
☐ AMENDMENT ☐ OTHER \_\_\_\_\_

Description YEAR-Record Number

☐ NOI ☒ Incoming ☐ Outgoing ☐ Internal ☐ Superceded

Board of Oil Gas & Mining  
Supplement Memoradrum  
Docket # 97-609 Cause M026007

☐ NOI ☐ Incoming ☐ Outgoing ☐ Internal ☐ Superceded

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☐ TEXT/ 8 1/2 X 11 MAP PAGES ☐ 11 X 17 MAPS ☐ LARGE MAP

COMMENTS: \_\_\_\_\_

CC: \_\_\_\_\_